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BT STANDS FOR BET

CATALOGUE No. 23

SEATTY BROS. LIMITED

HEAD OFFICE:

FERGUS, ONT.

1889
1889

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(1914) F 40

BEATTY BROS. LIMITED

CATALOGUE No. 23

EASTERN EDITION
WITH PRICE LIST OF

PUMPS

Cistern Pumps, House Force Pumps, Tank Pumps Windmill
Pumps, Cylinders, Pump Leathers, Lawn Hydrants,
Pipe Fittings, Tool Kits, etc., etc.

HAY TOOLS

Hay and Grain Unloaders, Hay Forks, Slings, Pulleys, Rack
Clamps, Load Binders, Steel Hay Tracks
and all Fittings

CHURNs, BUTTER WORKERS, BUTTER BOXES
WASHING MACHINES, WRINGERS, GRAIN
GRINDERS, SILO IRONS

BARN EQUIPMENT

Water Bowls, Barn Door Track, Harness Hooks, Feed Boxes,
Hay Racks, Tie Posts, Gutter Traps, Ventilators,
Steel and Wood Storage Tanks

OVERHEAD CARRIERS AND TRACK for all purposes.
FLOOR FEED AND PLATFORM TRUCKS

Factories:

FERGUS, Ont. LONDON, Ont.
WINNIPEG, Man.

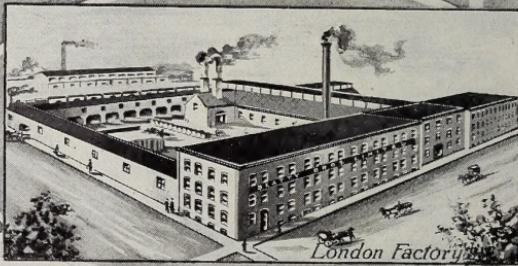
Western Factory and Office:
WINNIPEG, Man.



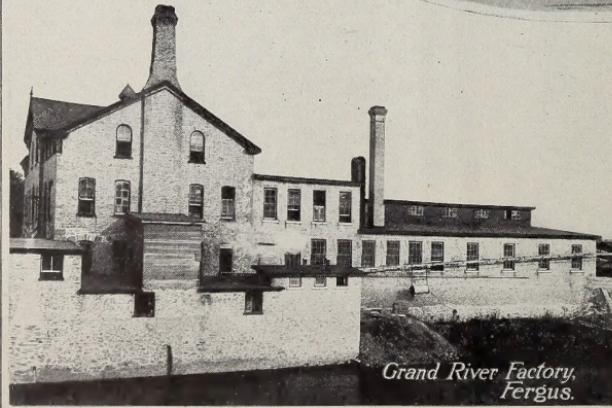
Winnipeg Factory



*Main factory & Office.
Fergus.*



London Factory



*Grand River Factory,
Fergus.*

View of our different Factories

BEATTY BROS. LIMITED

TO THE TRADE:—

WE HAVE much pleasure in bringing to your notice our No. 23 General Catalogue.

The growth of the B. T. Line has been so rapid and so extensive, that a catalogue that would combine together the various departments of the B. T. line, was essential.

THE BROAD B. T. LINE. When, some little time back, we bought the complete business of Messrs. Wortman & Ward of London, Ont., we added to the already broad and well-known B. T. line, another complete business, making the total, one of the broadest lines manufactured by any firm in Canada to-day.

MEANS SAVING IN FREIGHT. The advantages that our friends in the Trade may derive from the breadth of the B. T. line are many. Foremost of all, it enables the dealer to make up weight on his shipments, and so reduce the cost of freight. Secondly, it centralises the dealer's source of supply, and saves sending orders all over the country for the goods he may require. By its very breadth, he is assured that it is backed by a firm that is able to turn out satisfactory goods and give him every service.

THIS CATALOGUE describes goods that have won a name and reputation for themselves throughout the length and breadth of Canada. Those goods that formed part of the old B. T. line need no further introduction. The B. T. Hay Tools, Ladders, Stable Equipment, etc., are known throughout the Dominion, and the growth of the business in these lines is the best proof of their popularity. The lines formerly manufactured by Messrs. Wortman & Ward, such as Pumps, Churns, Washing Machines, Grain Grinders, etc., have been favorably known for 40 years.

A NEW IDEA. In every case we have given the prices and weights of the goods illustrated in this catalogue. These prices and weights will be found close to the goods to which they apply, thus making it very convenient to figure out the cost and freight on any article.

DISCOUNTS. We have also made a great improvement in the matter of discounts, in the present catalogue, by making one simple discount apply as far as possible to all the goods illustrated in it. We felt that this would greatly facilitate the work of those handling our goods when working out prices, and be a great improvement on the somewhat cumbersome system of different discounts formerly in use.

THE WORTMAN & WARD LINES. We can assure any of our friends that formerly handled the Wortman & Ward Lines, that it will be our ambition to keep them fully up to their former standard, and that at the same time, we shall spare no pains to add to them every modern improvement.

Finally, we would urge the dealer to put his time and attention on to selling goods that are freely advertised, that have a reputation behind them, and that are manufactured by a firm that has built up a big business from small beginnings, by giving good value for every dollar, and by fair dealing.

Should there be any points upon which you desire further information, kindly feel at liberty to call upon us at any time.

Knowing that the dealers who handle our goods are largely responsible for our success, we can assure you that we shall make every effort to please you in any transaction between us.

IMPORTANT NOTICE

THE PRICES in this catalogue cancel all previous price lists, and are subject to change without notice.

WE DO NOT send out goods on sale, approval or trial, but when properly set up and cared for, we will guarantee them to perform all we claim for them.

NO CLAIMS FOR SHORTAGE will be entertained unless presented to us within five days after goods are received. Always check off Bill of Lading before signing freight receipt.

OUR RESPONSIBILITY CEASES upon handing the goods over to the Railroad or Express Company. If goods arrive broken or are lost in transit, have same marked on Way Bill, and make claim against the Railroad or Express Company.

IN ORDERING GOODS always be careful to give figure numbers representing same.

NO GOODS RETURNED will be allowed credit unless by previous agreement on our part. Freight or Express charges on returned goods must be prepaid. In crediting returned goods a discount of 10 per cent. is always deducted to cover cost of repainting and re-handling.

GOODS RETURNED FOR REPAIRS should bear sender's name and address, and a letter of advice should be mailed with the Bill of Lading, giving all necessary instructions.

WE CARRY LARGE STOCKS and can ship without delay. No dealer who has lost customers by vexatious delays on the part of the manufacturer will fail to appreciate the importance of this point.

We manufacture Churns, Washing Machines, Pumps, and Grain Grinders at our London Factory. Dealers with whom we have an account will get quicker delivery by ordering the above goods from London. Other goods will be shipped more promptly from our Head Office in Fergus.

Throughout the catalogue, a code word is given for each different article. When ordering by telegraph, we advise using these code words combined with the cipher sentences printed below. Care should be taken, in writing cipher messages, that all words are carefully spelled, with all the T's crossed, and the I's dotted. Attention to the above points will greatly expedite shipment, and enable us to give you the best service.

THE FIGURE NUMBERS ON THE PUMPS HAVE BEEN CHANGED. For those who are familiar with the old numbers, we would say, that we have simply added 1000 to the figure numbers formerly used by Wortman & Ward. Thus Fig. 56 Pump becomes 1056, Fig. 197—Fig. 1197, and so on.

Below are some of the phrases commonly used in messages reaching us, and their equivalents in cipher:

Send by Express.....	Wad
Send C.O.D.	Waft
Send Traveller at once.	Wager
Send by quickest freight.	Waggish
Add to our order.	Wait
Ship our goods at once, if possible. If not, when.	Waiter
When will your Traveller be here?....	Wallet
Must have goods by—	Walnut
Send tracer for shipment of:—.....	Waltz
Instructions will follow by mail.	Wampum
Give preference over all other orders to this.	Wanness

THE BT CATALOGUE

— OF —

PUMPS, CYLINDERS, PIPE
AND ALL ACCESSORIES



MANUFACTURED IN LONDON BY
BEATTY BROS. LIMITED
HEAD OFFICE: - FERGUS, ONT.

FACTORIES:
FERGUS, ONT. :: LONDON, ONT.

FORMERLY MANUFACTURED BY
MESSRS. WORTMAN & WARD, LONDON, ONT.

Western Office and Factory:
WINNIPEG, MAN.

Stocks Carried at
FERGUS, LONDON and WINNIPEG.

IN this edition, we have made a decided departure from the old style conglomerate Pump Catalogue which seems to have so little of either sequence or sense that the average buyer cannot tell what style is best suited to his requirements.

To help the reader to understand our Pump goods, we decided that it would be necessary to:—

First. List and describe conditions ordinarily met with in pumping water. See pages 9, 10 and 11.

Second. Describe each Pump fully, and clearly show its **uses** and **limitations**.

Third. Group and classify Pumps of the same type, so that if Pumps of one type only are wanted, they will be found together in the catalogue. The purchaser can then compare and choose from the different grades and decide what quality he is willing to pay for, without searching the book from cover to cover.

Fourth. Eliminate from the catalogue all old-style, past-generation contrivances, which really went to the scrap heap years ago.

Fifth. Harmonize all prices so that one simple discount will cover every article.

Sixth. Illustrate the goods and the uses to which they can be put as clearly as possible.

Seventh. Reduce the endless lists of prices and varieties of Pumps by leaving set-length Pumps entirely out of the catalogue. The standards are listed separately and one simple table is given at the end showing the prices for the different set-lengths to go with the standards listed in the body of the catalogue.

Eighth. State clearly what work each standard is best suited for, and in each case give the length or lengths of stroke and sizes of pipe for which the standard is tapped, so that anyone can tell at a glance what size of set-length and style of standard he will require to operate a cylinder of a certain size.

Ninth. Make the cylinder list complete and prominent and give full description of each type. Also print a table giving the full working stroke of each cylinder in each class. The cylinder is really the vital and most necessary part of the pump.

Tenth. Supply a complete table and price list of set-lengths. By "set-length" we mean the section of pipe and also of pump rod necessary to connect up a standard and a cylinder of suitable size, in order to construct a complete working set-length, frost-proof Pump, less the suction pipe, which is a variable quantity and is sold by the foot.

As long as you are in the Pump business, remember that:—

1. To make a first-class job and to be assured of the maximum flow of water, the lower cylinder should be below the surface of the water.
2. If this is impractical, never use more than one length of suction pipe below the cylinder—i.e., never more than 20 ft.—and then add a foot valve and strainer.
3. A smaller well pipe than the one the cylinder is tapped for must not be used, since small pipes cause friction and waste much energy.
4. In case of an outdoor Pump, there must be a proper leak hole, and it must be located **below the frost line**, and as winter approaches, make sure that this leak hole is not clogged.
5. All joints must be well covered with lead paint and screwed or bolted air-tight. You cannot do this with your hands. Use first-class wrenches. See our tool kits on page 59.
6. The rods and rod couplings must be screwed together so that they will hold the plunger forever. Take special care in this regard with deep wells.
7. Our Pumps will work right only under the conditions for which we designed them, as specified in the catalogue.
8. Elbows should not be used except where absolutely necessary, since an elbow restricts the flow of water and causes more friction than many feet of straight pipe.

9. Pipe lines must have a gradual fall with no high spots to form air pockets.
 10. An anti-freezing Pump is one in which the cylinder is located well below the frost line and which also has a leak hole about 3/32 or $\frac{1}{8}$ of an inch in diameter bored in the well pipe above the cylinder, but also well below the frost line. The frost line is 3 feet below the surface in Ontario and the East, and 6 feet in the West.
 11. The Pump platform must be on a level with the ground, otherwise the standard set-length Pump would freeze up.
 12. Only first-class pipe, galvanized preferred, should be used, and then look out for cracks and faulty threading.
 13. That all stuffing-boxes exposed to the frost should be left off during Winter.
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IF YOU ASSEMBLE AND INSTALL YOUR OWN PUMPING OUTFITS.

Study our Catalogue and become familiar with our directions for installing. Always keep in mind that:—

1. All self-contained Pumps, by which is meant Pumps with the working barrel in the standard, such as those described on pages 14, 16, 17, 18 and 19, must be protected from frost. In cold climates, therefore, they are generally used only in heated or frost-proof buildings, such as kitchens, cellars, stores, etc.
2. If water is to be pumped from a cistern or shallow well to a sink in a kitchen or photo gallery, etc., on an upper floor, use one of the cistern Pumps fitted with intermediate pipe and an extra cylinder. This should be immersed in the water. Pumps to suit these conditions are described on pages 15 and 18.
3. We strongly advise the use of the better classes of Pumps, especially in the case of cistern Pumps.
4. The size of cylinder you can use depends on the depth of the well. See table No. 1, page 12.
5. In selecting a Pump for any outdoor well, first ascertain the full depth of the well, and if possible, the minimum depth of water. Then select the cylinder recommended for this depth from table No. 1, page 12. The size of cylinder, of course, determines the size of well pipe, as shown by table No. 1. Then select the standard to suit the well pipe with the correct stroke for the cylinder.
6. In case of a set-length Pump for shallow wells, first note whether large or small quantities of water will be used. Then choose a cylinder of capacity to suit. See table No. 1. The size of cylinder, of course, determines the diameter of the set-length pipe. Then choose a standard of correct stroke, tapped to suit this pipe.
7. To find the cost of a set-length Pump, total prices of cylinder, set-length (see set-length list on page 56), and standard. Then deduct the discount and you have the cost.
8. The Pump pipe must not rest on the bottom of the well, but must be suspended from the standard and clear the bottom of the well by 8 in. or 12 in., so that the Pump cannot draw sand or dirt to lodge under or cut the valve.
9. The Pump platform must be sufficiently tight to keep out the frost and dirt, and must also be strong and durable enough to carry the standard with its heavy train of well pipe. This is especially important when the Pump is to be power-driven. For dug wells, cement curbing and cement slab covers are ideal.

IF YOUR PUMP WILL NOT BRING THE WATER CONSIDER THE FOLLOWING BEFORE YOU CONDEMN IT.

1. Is there any water in the well? If not, no further explanation is necessary.
 2. If the Pump discharges air-bubbles with the water, there is an open joint or crack in the suction pipe, that is the pipe below the cylinder.
 3. Does the water run back down the well pipe, so that the Pump loses its priming? If so, the check valve or seat is either out of order and in need of renewal to some extent, or solid matter of some sort has lodged between valve and seat so as to leave an opening through which the water escapes. The latter trouble proves either that the well needs cleaning, or that the suction pipe is too low. Remedy: Remove the valve and scrape the lower side with a knife, so as to remove all grit. Wash off the seat, flush the screen, then clean out the bottom of well or raise the well pipe. Always use a screen in deep wells and a foot valve also.
 4. If the handle jerks back when pushed down, the water is either too far below the cylinder or the supply is wholly or partly cut off. In case of drive wells, the screen may be closed up. It might be that the suction pipe is too small or partly plugged in the galvanizing process.
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OUR FACTORY CAN BUILD YOUR PUMP COMPLETE READY FOR THE WELL.

We can build your Pump for you at very little more than the cost of the material, and it will be done right. Make use of our special machinery which saves time and money and makes perfect fits. Because of our anxiety to be sure that the correct standard and parts are chosen and correctly fitted, we offer to do this work for you at lowest factory prices, in order that B-T Pumps may give perfect satisfaction. You get the benefit of our knowledge and experience free.

Let us know:—

1. The kind of well and the full depth from top of platform.
2. If it is a drilled well. Give the inside diameter and state whether the well casing extends to the surface or not.
3. If it is partly dug and then bored or drilled. Give the exact distance dug, and also the diameter of the drilled hole.
4. If possible, state the depth of water in the well during the dry season.
5. The style of standard you prefer.
6. The size of cylinder you wish.
7. Whether you desire black or galvanized pipe.
8. If the water is to be forced beyond the Pump, and if so, give exact distances, horizontal and vertical. Specify whether frost-proof, underground or exposed delivery is desired. Send a drawing to illustrate your description if possible.
9. If the water is to be drawn horizontally, as well as vertically, and give the exact measurements; and as in the former case, send a drawing to illustrate your meaning.

If the above information is given us carefully and correctly, we will build the best possible Pump for the job.

A DESCRIPTION OF THE DIFFERENT TYPES OF WELLS INDICATING THE STYLES OF PUMPS TO BE USED WITH THEM.

As there are many sources of water supply, and several ways of disposing of or storing it, so there must be a corresponding number of types of Pumps to make the water available and meet the different methods of delivery. Wells depend for their supply upon the water which falls in rain or snow. Possibly four-fifths of the rainfall or more soaks into the ground, the remainder passes off in streams. The earth's surface, to a depth of about four hundred or five hundred feet, is a sponge, which at once filters and holds the water. At a depth of about five hundred feet the earth's crust becomes so dense that unless there be very hard and porous rock, the water cannot penetrate it, and so, under ordinary circumstances, the greater supply of fresh water will be found within less than five hundred feet of the average surface level.

In the following pages the different kinds of wells are taken up and briefly described, and the Pumps most suitable for use with them, are indicated.

Class 1. Cisterns and Shallow Wells for Indoor Delivery.

- (a) In most houses, water has to be pumped from a cistern or shallow well, or from both, to the kitchen or laundry sink, so we supply a line of self-contained, short standard Pumps of various qualities and prices, Figs. 1001, 1056, 1005, 1002, 1074, for this purpose.
- (b) Sometimes **all the water** is to be delivered to an overhead tank, so that the water will be on tap in the kitchen, bathroom and laundry, so Figs. 1046, page 19, and 1113, page 48, were designed for this purpose. These must be set up in some frost-proof place.
- (c) In some cases it is desired to force this water through a hose for spraying purposes, or to an attic storage tank for bathroom supply, etc., and as well as this, deliver the water through the spout at the sink, so Figs. 1009, 1321 and 1039, pages 16, 17 and 18, were designed for this purpose.
- (d) Sometimes the living or work rooms are above the ground floor, so, for delivery to a sink, a suitable cistern pump must be used with a cylinder and intermediate pipe, as per Figs. 1332, 1333, and 1334, page 15.

Class 2. Outdoor Cisterns and Shallow Open Wells.

- (a) For domestic use, where only a small quantity of water is used daily, and the lowest cost Pump consistent with quality is desired, use one as shown on page 20, together with the necessary set-length and cylinder. Specify Fig. 1170 Force Pump, if hose is to be used for washing buggies or watering plants.
- (b) If a high-grade Pump of large capacity is desired, choose one from pages 21 to 35 inclusive, also pages 41 and 43, where standards will be found built to suit all conditions, to be operated either by hand or power, for force or lift, with extra discharge attachments above ground (see Figs. 1185, 1339, 1248, 1192, 1247 and 1249), or below the frost line (see Figs. 1250 1251, 1252, 1253, 1099 and 1158).
- (c) If large quantities of water are to be pumped daily, as for example, watering stock or for public watering places, select one of the Pumps described on pages 36 to 40 inclusive. In barns or factories for use with windmills or other power, use Siphon Pump, Fig. 1150. For filling thresher tanks, pumping from sewers, cellars, etc., use Jumbo and low down Tank Pumps, Figs. 1040 and 1042.

Class 3. Deep Open or Dug Wells.

Deep wells of any kind require first-class, reliable standards. Choose one from those listed on pages 26 to 35 inclusive, where all the different demands they are assigned to meet are fully explained. Ascertain the depth of the well, consult table No. 1, page 12, for correct cylinder to use, and build the Pump so that the cylinder is submerged.

Class 4. Bored Wells.

These wells are sunk sometimes to a depth of 70 ft. with boring tools 8 in., 10 in. or 12 in. in diameter, generally through stiff clay, which requires no curbing. Sometimes, however, a wooden crib or sewer pipe is used to keep the well open.

The Pumps recommended for bored wells are those shown on pages 26 to 34, inclusive. If a branch pipe, three-way underground Pump is wanted, the well should be dug out to a larger diameter down to the branch pipe coupling, so that any repairs may be easily made.

Class 5. Driven Wells.

In some localities the ground is free from stones and rock, and the soil is of such a nature that a well or suction pipe can be driven down to the water-bearing level. This method is practical only where the well pipe needs to be driven but a short distance, in order to reach the water-bearing strata. The reason for this is that since the Pump cylinder is generally attached above the driven pipe, 20 feet is about the maximum length the driven pipe can have. In every case a dry well is dug and curbed deep enough so that the cylinder will be well below the frost line. The bottom of the well cannot be more than 20 feet above the drive well point, but the dry well can be dug deeper if necessary, in order to reach the water. If the water-bearing strata is near the surface, the pipe may be driven first and the dry well dug around it, after which the well pipe is cut and threaded to suit the set-length.

To drive a well, a drive point must be used. See page 63 for description. First select a good piece of well pipe 4 or 5 feet long, well threaded on each end. On one end secure the drive well point, and on the other screw the drive well cap, see Fig. 1140, page 61, which is especially designed to receive the shock of the mallet and save the pipe thread from injury. Now sledge the drive well point and well pipe down into the ground up to the cap. Couple on another 4 or 5 foot length of well pipe, put on the cap and drive it down again. Repeat this operation until the desired depth is reached and water secured.

To prepare the well for actual use, temporarily attach a large-sized cistern Pump to the well-pipe, and prime. Pump steadily until the water is clear, thereby showing that the well pipe is free from all particles of sand. Then quickly trip the check valve by raising the pump handle so that the water will rush down the well pipe and out through the screen into the sand or gravel, thus separating the fine particles from the coarse. Again resume pumping until the water has become clear, and repeat this operation of alternately pumping and flushing until the water no longer comes discolored. The well is then ready for use after the regular Pump has been attached.

Class 6. Drilled or Artesian Wells.

When it is desired to secure water from water-bearing strata some distance below the surface, wells 3, 4, 5, 6, 7 and 8 inches or even more in diameter are drilled down until a good supply of water is reached. As the drilling proceeds, a heavy water-tight steel well casing is sunk until the water line is reached. If solid rock is struck, the well casing is generally driven 2 feet or 3 feet further to exclude impure surface liquids, loose dirt, etc.; but from that point on the rock forms the casing. A well of this kind with its steel well casing extending to the base of the pump, is proof against all impure surface liquids, insects, toads or other undesirable foreign matter of any description. It can be sunk in the centre of a barn yard or manure pile, yet the water will be absolutely pure, and always cold, because the earth is a natural filter and the water is protected from the sun.

- (a) For wells of this kind we recommend Pumps as shown on pages 26 to 34, inclusive. The cylinder must be submerged well below the water line, and well pipe of slightly greater inside diameter than the cylinder should be used with wood pump rod, so that the plungers and valves can all be drawn up for repairs without disturbing the well pipe.
- (b) If it is desired to use a three-way, underground Pump, a close, cement-curbed dry well must be dug 6 or 8 feet in depth, with the casing reaching just to the bottom of this.

Class 7. Combination Wells.

Often after a dug well has been in use for a time, it is found that it will go dry in summer or will not supply sufficient water. In case of this kind, by means of a drive pipe in the bottom of the well, enough water may be secured. Better still, a drilled and cased well may be started at the bottom of the dug well. In these cases use standards, pages 26 to 35, inclusive, for delivery at the spouts, or Figs. 1250, 1251, 1252, 1253, 1099 and 1158 for combined underground and spout delivery. For underground delivery alone, with power, use stuffing box heads, Figs. 1057, 1153, 1058, 1159, 1112 with the necessary well pipe, cylinders, air-chambers, etc.

Table No. I. Giving Proper Cylinders and Well Pipe for Wells of Different Depths.

6	inch cylinder for wells	20 feet or less, use 3	inch well or suction pipe.
5	inch cylinder for wells	25 feet or less, use 2½ inch well or suction pipe.	
4	inch cylinder for wells	35 feet or less, use 2	inch well or suction pipe.
3½	inch cylinder for wells	50 feet or less, use 1½ inch well or suction pipe.	
3	inch cylinder for wells	75 feet or less, use 1¼ inch well or suction pipe.	
2½	inch cylinder for wells	150 feet or less, use 1¼ inch well or suction pipe.	
2¼	inch cylinder for wells	175 feet or less, use 1¼ inch well or suction pipe.	
2	inch cylinder for wells	200 feet or less, use 1	inch well or suction pipe.

Table No. II. The Capacity of BT Pumps.

The capacity of a pump depends altogether on:—

1. The inside diameter of the cylinder.
2. The length of the working stroke;
3. The number of strokes per minute.

The capacities of the Cylinders listed below are calculated for 40—6" 8" and 10" strokes per minute.

Diameter of Cylinder	Cross Section Area in Inches	Gallons Raised per Hour		
		6 in. Stroke	8 in. Stroke	10 in. Stroke
2 inches	3.1416	230	307	383
2½ "	4.9087	250	333	417
3 "	7.0686	365	487	608
3½ "	9.6211	500	667	833
4 "	12.566	640	853	1067
4½ "	15.904	825	1100	1375
5 "	19.635	1020	1360	1700
5½ "	23.758	1230	1640	2050
6 "	28.274	1460	1947	2433

DIRECTIONS FOR BUILDING AND INSTALLING A DEEP WELL PUMP.

Ascertain the depth and diameter of well, also distance to water. Then decide on the size of cylinder and full length of well pipe. Having assembled all the necessary parts, commence to build the pump on the ground as follows: Screw into the pump head a set-length pipe complete with leak hole. Screw into the bottom of the cylinder one length of suction pipe and on the other end of this pipe, screw a check valve. Into the bottom of the check valve, screw an 18 in. or 2 ft. piece of suction pipe and on the other end of this, secure a screen. Now lay out sufficient intermediate pipe to make the full length, together with the cylinder, suction and set-length sections. Now start coupling pump rod and pipe to the standard and set-length, taking care that each pump rod coupling comes 6 or 8 in. nearer the pump standard than the pipe coupling, for it is necessary, as the pipe is being lowered into the well, that each section of pump rod extends above each section of well pipe a short distance, so that the pump rods can be coupled. When you come to the cylinder, turn the handle down and cut the pump rod $1\frac{1}{2}$ in. longer for outside cap cylinders, and 2 in. longer for inside cap cylinders than the well pipe, and cut a proper thread. The pump is now all ready for the well. Pumps built for deep wells in the factory are assembled as described above, so the following directions for installing apply to all.

First, set up a ladder in an inclined position above the well-hole, supported by two inclined side braces. Station a man on the ladder to help handle the long sections of well pipe. Then elevate the first section, composed of cylinder, suction pipe, foot valve and screen, to a vertical position and carefully lower it into the well. Secure this section by means of a simple wooden clamp made of two pieces of strong wood and two bolts. Next, elevate the first length of intermediate pipe and suction rod and direct the helper on the ladder to hold the well pipe while you screw the pump rod securely into the plunger. If the cylinder has a short rod, discard it. After connecting the pipe to the cylinder, remove the clamp and lower again until only a foot or two of pipe is left above the ground and put on the clamp. The pump rod will stand 6 or 8 in. above the end of the pipe. Now elevate the second length of intermediate pipe and pump rod and first couple the pump rod and then the pipe. In coupling the pump rod, hold the bottom section firmly with a small pipe wrench and turn the top section only, either by means of a wrench on the rod coupling or a pipe wrench on the upper rod itself. Never turn the lower sections of pump rod, as that will be sure to loosen and perhaps completely separate the lower couplings. Follow this method with the remaining pipe sections and also with the set-length and pump head. Then remove the clamp for the last time, and lower till the standard sits firmly on the platform with the whole train of well pipe suspended from it.

High Grade Low Cost Cistern Pumps

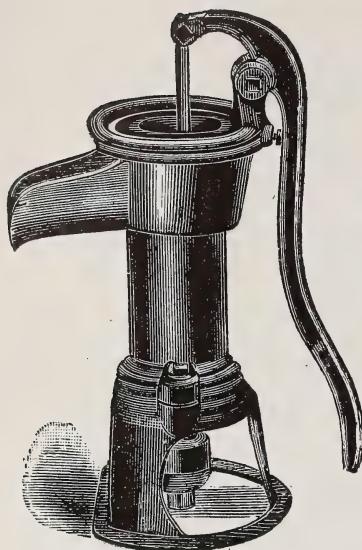


Fig. 1001

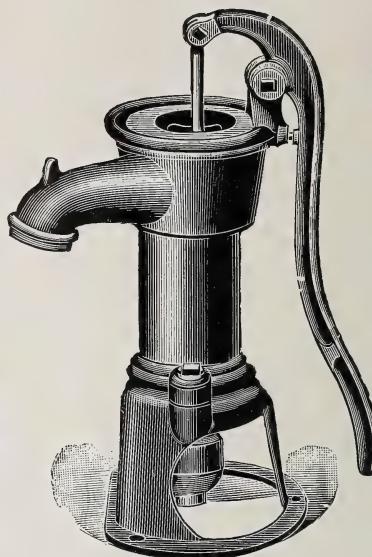


Fig. 1056

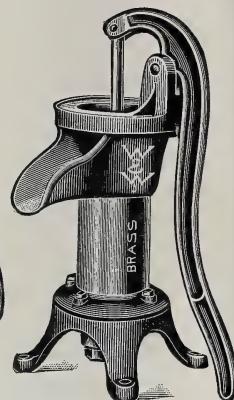


Fig. 1005

These Pumps are strongly built and embody the very latest ideas in design. The materials used are the best money can buy, and the workmanship and finish are the finest that experienced workmen and modern machine tools can produce.

Figs. 1001, 1056 and 1005 illustrate our line of low-cost Cistern Lift Pumps. All have large bowls which will not slop over with hard pumping, close tops, revolving caps and TILTING VALVES, which can be tripped to free the pumps of water, if in danger of freezing, simply by raising the Pump handles to their limit.

In addition, Fig. 1001 Pump has an open or pitcher spout, high open base and a coupling nut by means of which the suction pipe can be coupled or uncoupled to the base above the sink without removing the Pump. It is built in five sizes.

Fig. 1056 is similar in all respects to Fig. 1001, except that it has a round or closed spout.

Fig. 1005 Pump has a pitcher spout and a solid brass, nickel-plated cylinder, and nickel-plated plunger rod, and is handsomely finished so as to be an ornament in the most modern kitchen.

One size only, 3 in. cylinder. Stroke $3\frac{1}{2}$ in. Weight 20 lbs.
Price \$4.80 Code, Abaft.

PRICE LIST OF FIGS. 1001 AND 1056 :

No.	Diam. of Cylinder Inches	Stroke Inches	Fitted for Pipe Inches	Iron Weight Lbs.	Cylinder Price	Code	Brass Lined Cylinder Price	Code
1	$2\frac{1}{2}$	$3\frac{1}{2}$	1	20	\$2.60	Abeam	\$3.90	Ablaze
2	3	$3\frac{1}{2}$	$1\frac{1}{4}$	$23\frac{1}{2}$	2.90	Abet	4.35	Abegmate
3	$3\frac{1}{2}$	$3\frac{1}{2}$	$1\frac{1}{2}$	$25\frac{1}{2}$	3.20	Abide	4.80	Abode
4	4	$3\frac{1}{2}$	2	30	3.80	Ability	5.40	Abolition
5	$4\frac{1}{2}$	$3\frac{1}{2}$	2	35	5.70	Abjure	7.50	Abound

High Grade Low Cost Cistern Pumps



Fig. 1334



Fig. 1332

Price **\$2.80** Code, Aid



Fig. 1333

Price **\$2.80** Code, Ail

Figs. 1332 and 1333 illustrate Figs. 1001 and 1056 Pumps with plunger and valves omitted so that the working barrel can be placed at some distance below the base as per Fig. 1334.

These Pumps are suited for use out of doors, where exposed to frost, or on the upper floors of buildings, etc., where it is desired to draw water from a cistern or shallow well.

In the first case, a sufficient quantity of pipe and pump rod must be used between the pump base and cylinder so that the cylinder will be well below the frost line. A leak hole must be bored just above the cylinder.

In the second case, sufficient pipe and pump rod must be used so that the cylinder will be in the water or within a few feet of it.

For prices of set lengths, see Set Length List on Page ~~51~~. Cylinders are listed on page ~~52~~.

Fig. 1006 illustrates our Light Cistern Force Pump. It embodies many special features, such as revolving head, tilting valve, which is tripped by raising the handle, solid brass stuffing box, solid brass nickel-plated cylinder, long fulerum, air-chamber on spout with outlet on top for pipe connection and an extra fine finish.

It is designed to lift water from the cistern and discharge it through the spout, or when cap is screwed on, through pipe from air-chamber to attie tank. It is made in one size only, with 3 in. solid brass cylinder.

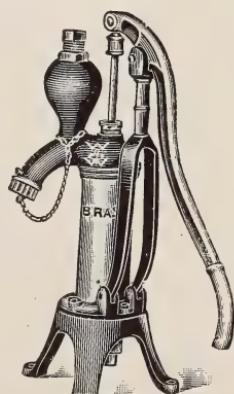


Fig. 1006

Price **\$6.60**
Code, Abscond
Stroke 4 in. Wgt. 20 lbs.

High Grade Medium Weight House and Cistern Force Pumps



Fig. 1003

Price \$7.20

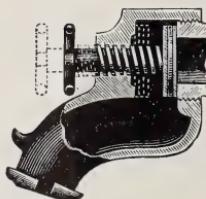


Fig. 1195

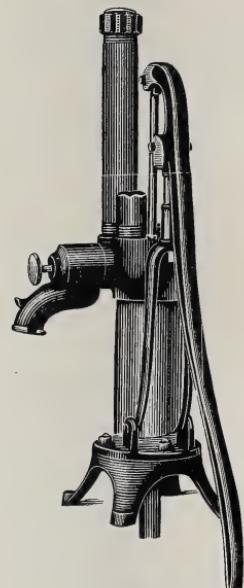


Fig. 1004

Price \$9.60

House Force Pumps

With Nickel Plated Solid Brass Cylinders 3 in. in Diameter.

For Prices see following page.

These Pumps embody every possible feature yet devised to make a perfect house pump which will meet every condition, and yet be sold at a low price. We would draw special attention to the long handle bearer which does away with all links and reduces friction; the large pipe air-chamber; the threaded opening on top of pump for 1 in. pipe connection to elevated storage tank; our patented cock spout with wheel operated valve which cannot freeze and burst. This latter feature is shown in section by Fig. 1195.

Our Figs. 1003 and 1004 are fitted with solid brass, nickel plated cylinders. The same pump, fitted with iron cylinder, is shown on page 17. The brass cylinders are 3 in. in diameter and cast iron cylinders 2½ in.

High Grade Medium Weight House and Cistern Force Pumps



Fig. 1320

Price \$5.40



Fig. 1195

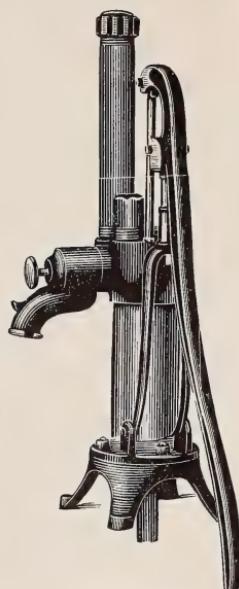


Fig. 1321

Price \$7.80

House Force Pumps

Cast Iron Cylinders 2½ inches in Diameter

For description see page 4

Diameter of Well Pipe

PRICES OF PUMPS SHOWN ON PAGES 16 AND 17

Figure Number	Diam. of Cylinder In Inches	Length of Stroke Inches	Weight Lbs.	Price	Code
1003	3 Brass	6	26	\$7.20	Absent
1004	3 Brass	6	27	9.60	Absolute
1320	2½ Cast	6	28	5.40	Absorb
1321	2½ Cast	6	29	7.80	Abstainer

High Grade Heavy Cistern Lift Pumps

Designed for Hard Work and Long Life

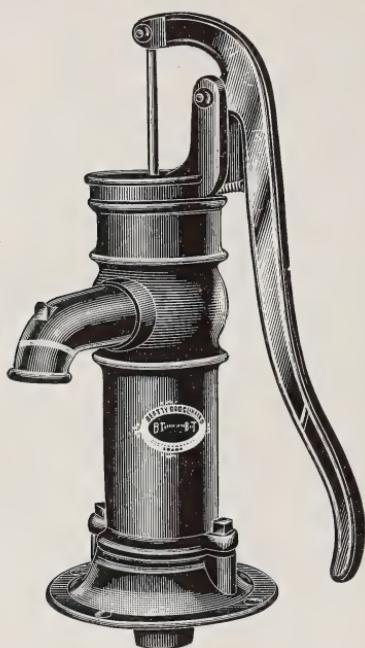


Fig. 1002



Fig. 1074

We recommend the use of these Pumps for house use in cisterns and shallow wells in all cases, for they will easily pump more water and outlast the cheaper styles.

The castings are strong and all pins are of large diameter, to withstand great strain and much hard wear. In thirty years of service they will only require a couple of extra sets of leathers, and possibly an extra set of pins. They will prove the cheapest in the long run.

Fig. 1002 illustrates a House Lift Pump with revolving cap and handle bearer, strong base and standard coupling nut for either lead or gas pipe connection. To remove the plunger, simply loosen the set screw in the cap, and lift out.

Fig. 1074 illustrates a House Lift Pump with all the advantages just enumerated for Fig. 1002, and, in addition, has a Siphon spout to give a steady stream of water, and also an open base with the coupling nut so placed that the suction pipe can be connected or disconnected from the pipe above the pump stand without disturbing the pump.

For prices on set lengths of this Pump, see list covering these on page 54.

SIZES AND PRICES.

No.	Size Cyl. Ins.	Size Stroke Ins.	Size Pipe Ins.	Iron Wgt. Lbs.	Brass Cyl. Price	Code	Lined Cyl. Price	Code
Fig. 1002—No. 1	2½	5½	1¼	25½	\$4.00	Abstract	\$5.60	Accede
Fig. 1002—No. 2	3	5½	1¼	30	5.00	Absurd	7.00	Accept
Fig. 1002—No. 3	3½	5½	1½	31	6.40	Abundant	9.20	Accident
Fig. 1002—No. 4	4	5½	2	32	8.00	Abut	12.00	Accolade
Fig. 1074—No. 1	2½	5½	1¼	27	4.00	Abysmal	5.60	Accord
Fig. 1074—No. 2	3	5½	1¼	30	5.00	Acacia	7.00	Accustom
Fig. 1074—No. 3	3½	5½	1½	36	6.40	Academic	9.20	Achieve
Fig. 1074—No. 4	4	5½	2	38	8.00	Acarus	12.00	Accrue

High Grade Heavy Duty House Force Pumps

Designed for Exacting Service and Long Life



Fig. 1039

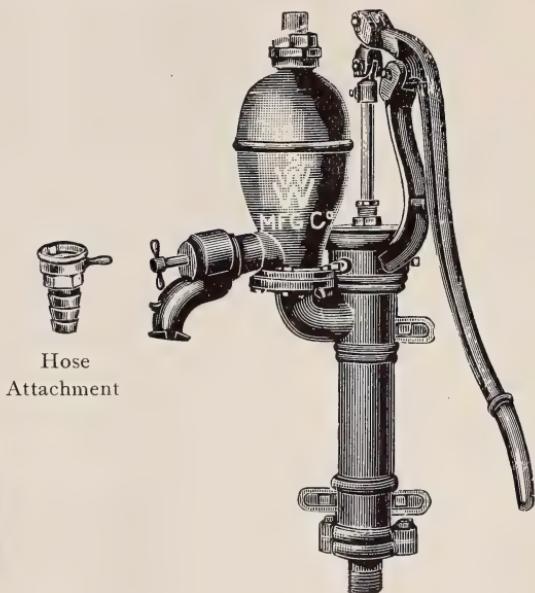


Fig. 1046

These Pumps cannot be equalled for house use in cisterns and shallow wells. They can be placed in laundry or kitchen and will deliver water at the spout, through a hose to the garden or to tanks in the attic. They are easily worked under all conditions. Fig. 1046 is for use on sinks for attachment to wall or plank.

Note these points:

1. Large castings and parts of sufficient size to insure great strength, rigidity, power and long life.
2. Five-eighths inch drawn steel plunger rod and heavy brass stuffing nut.
3. Capacious air chamber, which insures a steady stream.
4. Pipe connection for delivery to elevated tank.
5. Long handle.
6. Tilting valves which can be tripped to clear the pump of water if in danger of freezing, simply by raising the handle to its highest position.
7. Patented Cock Spout which cannot be injured by frost.
8. Revolving pump handle.
9. Hose attachment.
10. Air valve.

Fig. and No.	Diam.	Fitted	Stroke Inches	Weight Lbs.	Iron	Cylinder	Brass Lined	Brass Body
	of Cyl'dr	for Pipe			Price	Code	Price	Code
Fig. 1039—No. 1	2½	1 or 1¼	5½	54	\$15.00	Aching	\$17.40	Acquaint
Fig. 1039—No. 2	3	1¼ or 1½	5½	57	17.40	Acidulate	20.40	Acquire
Fig. 1046—No. 1	2½	1 or 1¼	5½	54	15.00	Acme	17.40	Acre
Fig. 1046—No. 2	3	1¼ or 1½	5½	57	17.40	Acorn	20.40	Acrobat

Light Pump Standards



Fig. 1322
Price - \$4.80
Code, Acumen
Stroke 5½ in. Wgt. 41 lbs.



Fig. 1194
Price - \$5.40
Code, Acute
Stroke 5½ in. Wgt. 38 lbs.

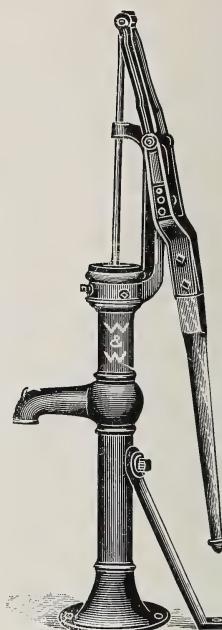


Fig. 1168
Price - \$5.40
Code, Adamic
Stroke 6 in. Wgt. 43 lbs.



Fig. 1170
Price - \$6.00
Code, Adapt
Stroke 6 in. Wgt. 43½ lbs.

Figs. 1322, 1194, 1168 and 1170 represent our line of low cost standards. They have sufficient strength and capacity for domestic use, and are designed for use in outdoor cisterns and shallow wells.

They are usually sold with set-lengths, but may also be used in wells of moderate depth up to 35 ft., if the cylinder is placed near the bottom. The cylinders, which are the effective part of the pump, are of the highest grade and exactly the same as those used on our best Pumps.

Fig. 1322 represents a steel pipe *lift* standard for hand use only.

Fig. 1194 represents an all-iron *lift* standard for hand use only.

Fig. 1168 represents an all-iron *lift* standard for hand and windmill use.

Fig. 1170 represents an all-iron *force* standard for hand and windmill use.

All have revolving tops and handle-bearers, full 6 in. stroke and are tapped to order for either 1¼ in. or 1½ in. pipe.

Figs. 1168 and 1170 have wood handles and the easy-working Superior Top.

For Pump standards complete with set-length and cylinders, see set-length and cylinder lists on pages 56 and 55 respectively, and add these prices to those of the standards given above.

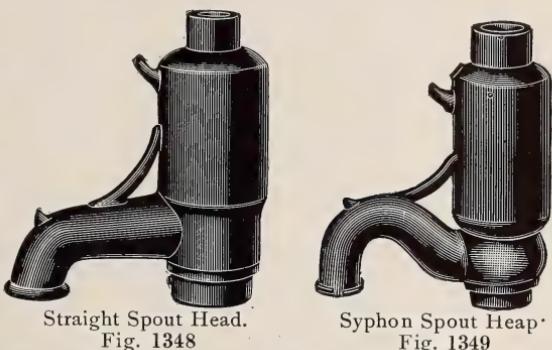
These standards must not be used with cylinders more than 3½ in. in diameter.

The standard set-length in Ontario and the East is 4½ ft. for cast iron and 3 ft. for steel pipe. In the North-West it is 8 ft. for cast iron and 6 ft. for steel pipe.

Medium Weight Steel Pipe Pumps

On pages 22 to 26 is listed the broadest line of steel pipe Pumps built. The standard in every case, with the exception of Fig. 1324, is $1\frac{1}{2}$ in. steel water pipe and can be supplied to order with coupling for either $1\frac{1}{4}$ in. or $1\frac{1}{2}$ in. pipe. The bases are all the same and are made of two heavy castings bolted together and clamped to the steel standard, thus allowing the pump head to be adjusted vertically to any position desired. There are two styles of spout heads, Syphon and Straight, Figs. 1348 and 1349, with large reservoirs. These spout heads are finished either for force or lift. All force pumps have hose attachment. These standards, with the exception of Fig. 1324, should not be used with cylinders more than $3\frac{1}{2}$ inches in diameter.

There are five styles of tops, complete with handle bearers and handles. With one base, one steel pipe stand, five styles of tops, two of each kind of spout heads (force and lift), any of the twenty different styles of pumps illustrated on Pages 22 to 25 inclusive, and first half of Page 26, can be built.



Straight Spout Head.

Fig. 1348

Syphon Spout Head.

Fig. 1349

The Superior, Perfection and Ratchet Tops have wood handles, and the Challenge and Reliance, iron. We strongly recommend Challenge Tops for lift pumps and the Superior for force pumps, or for combined hand and windmill use.

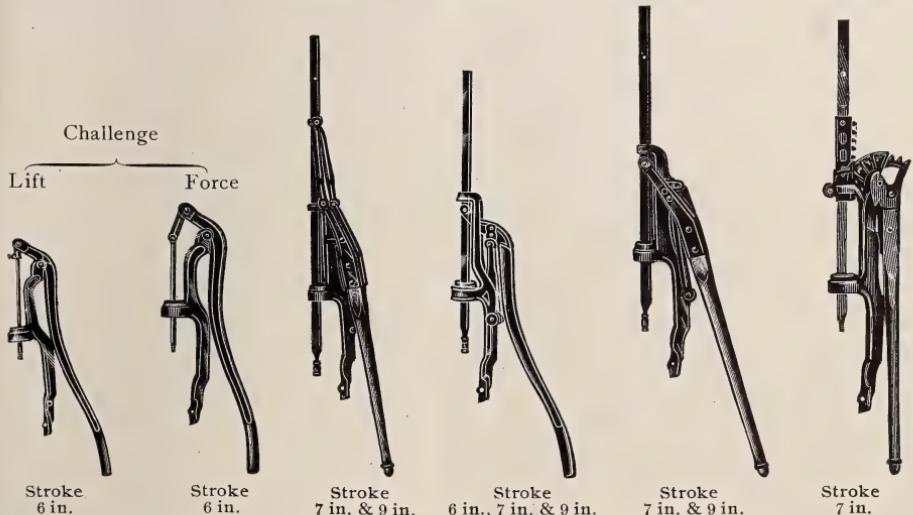
All handle-bearers are designed for rigid connection to the standards both below and above the spout head.

Superior

Reliance

Perfection

Ratchet



The spout heads and complete handle-bearers are also interchangeable with the all cast iron pumps illustrated on Pages 29 to 33 inclusive.

Prices given on Pages 22 to 26 are for standards only. For prices of cylinders, see cylinder list, and for set-lengths, see steel pipe pump, set-length list, page 54.

Medium Weight Steel Pump Standards

Challenge Top—For Hand Use Only

LIFT

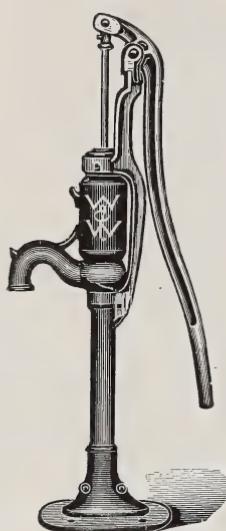


Fig. 1308

Price - \$5.40

Code, Adder
Stroke 6 in. Weight 59 lbs.

Syphon Spout

FORCE



Fig. 1309

Price - \$6.60

Code, Adept
Stroke 6 in. Weight 61 lbs.

Challenge Top—Straight Spout

LIFT



Fig. 1310

Price - \$5.40

Code, Adhere
Stroke 6 in. Weight 59 lbs.

FORCE



Fig. 1311

Price - \$6.60

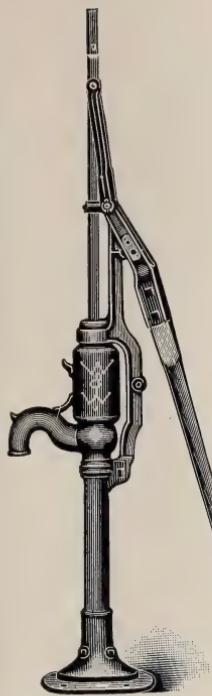
Code, Adhesive
Stroke 6 in. Weight 61 lbs.

Medium Weight Steel Pump Standards

Superior Top.

For Hand or Power Use.

Syphon Spout.



LIFT

Fig. 1300

Price - \$6.60

Code, Adipose

Stroke 7 and 9 in. Weight 64 lbs.



FORCE

Fig. 1301

Price - \$7.80

Code, Adjacent

Stroke 7 and 9 in. Weight 65 lbs.

Superior Top. Straight Spout.



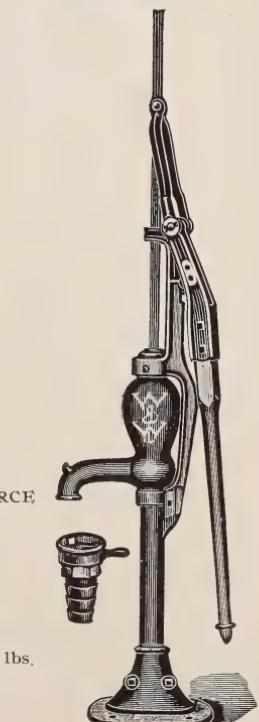
LIFT

Fig. 1302

Price - \$6.60

Code, Adjourn

Stroke 7 and 9 in. Weight 64 lbs.



FORCE

Fig. 1303

Price - \$7.80

Code, Admiral

Stroke 7 and 9 in. Weight 65 lbs.

Medium Weight Steel Pump Standards



Fig. 1312
Price - \$6.60

Code, Admirer
Stroke, 7 in. & 9 in. Weight, 59 lbs.

Perfection Top
For Hand or Power
Use
Siphon Spout



Fig. 1313
Price - \$7.80

Code, Admit
Stroke, 7 in. & 9 in. Weight, 60 lbs.



Fig. 1314
Price - \$6.60

Code, Admonish
Stroke, 7 in. & 9 in. Weight, 59 lbs.

Perfection Top
Straight Spout



Fig. 1315
Price - \$7.80

Code, Adobe
Stroke, 7 in. & 9 in. Weight, 60 lbs.

Medium Weight Steel Pump Standards

LIFT

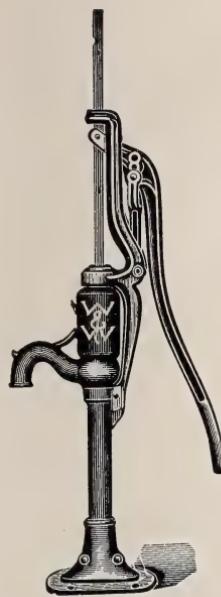


Fig. 1304

Price - \$6.60

Code, Adonis

Stroke, 6in. 7in. & 9in. Weight 67 lbs.

Reliance Top
For Hand or Power
Use
Syphon Spout

FORCE

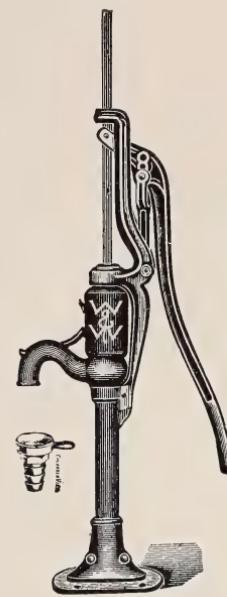


Fig. 1305

Price - \$7.80

Code, Adore

Stroke, 6in. 7in. & 9in. Weight 68 lbs.

LIFT

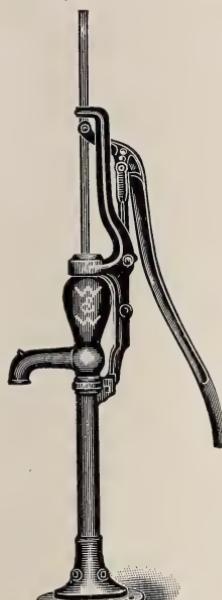


Fig. 1306

Price - \$6.60

Code, Adroit

Stroke, 6in. 7in. & 9in. Weight 67 lbs.

Reliance Top

Straight Spout

FORCE



Fig. 1307

Price - \$7.80

Code, Adust

Stroke, 6in. 7in. & 9in. Weight 68 lbs.

Medium Weight Steel Pipe Pump Standards

Ratchet Top. For Hand or Power Use

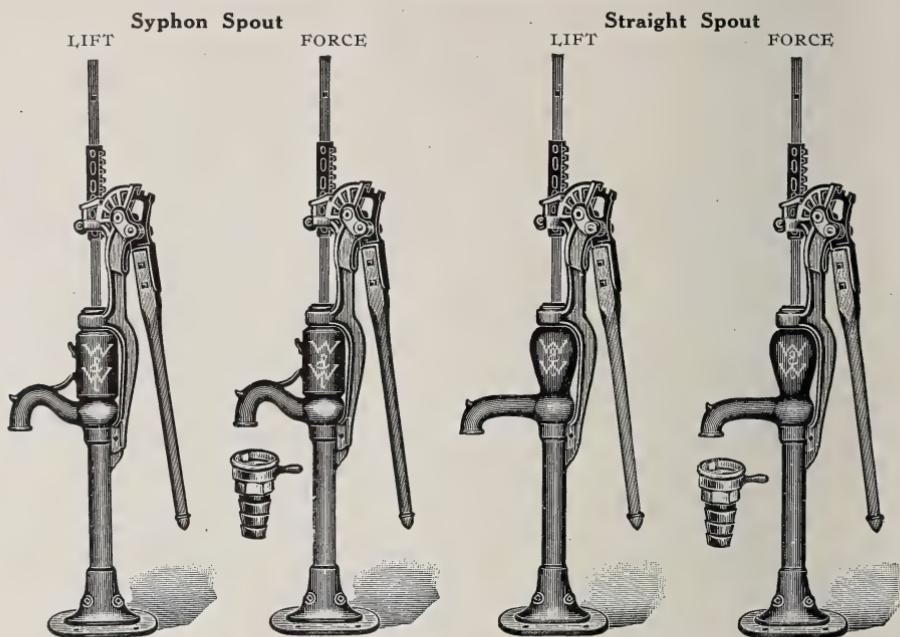


Fig. 1316

Price - \$6.60
Code, Advent
Stroke 7 in. Wgt. 63 lbs.

Fig. 1317

Price - \$7.80
Code, Advocate
Stroke 7 in. Wgt. 64 lbs.

Fig. 1318

Price - \$6.60
Code, Aerial
Stroke 7 in. Wgt. 63 lbs.

Fig. 1319

Price - \$7.80
Code, Aeronaut
Stroke 7 in. Wgt. 64 lbs.

Superior-Lever Force Pump

For Hand Use Only

Has Seven and Nine Inch Strokes



Fig. 1323

Price - \$7.80
Code, Aface
Stroke 7 and 9 in. Weight 64 lbs.
Made of 1½ in. Pipe.

Figs. 1323 and 1324 represent our Superior-Lever Pump, fitted for hand use only. It has adjustable base, wrought iron brace, and can readily be converted into a Wind-Mill Pump by the addition of a flat bar which screws into the Crosshead on top. We can supply them as lift pumps only, by omitting the stuffing boxes, at a reduction of \$1.20 in the list price.



Fig. 1324

Price - \$8.40
Code, Affair
Stroke 7 and 9 in. Weight 66 lbs.
Made of 2 in. Pipe.

Heavy, Solid Pump Standards

With Cock Spout and Back Outlet

Tapped to Order for 2 in., 1½ in. or 1¼ in. Pipe



Fig. 1180
Price, \$8.40
Code, Affirm
Stroke 7 in. and 9 in.
Weight 66 lbs.

Fig. 1182
Price, \$9.60
Code, Afford
Stroke 7 in. and 9 in.
Weight 67 lbs.

Fig. 1185
Price, \$12.00
Code, Afield
Stroke 7 in. and 9 in.
Weight 67 lbs.

Fig. 1339
Price, \$15.00
Code, Agape
Stroke 7 in. and 9 in.
Weight 71 lbs.

For Hand or Windmill use, 9 in. stroke, Large Reservoir, built extra heavy for Deep Wells and Long Cylinders. Spout 3½ in. higher than any other make.

Figs. 1180, 1182, 1185 and 1339 illustrate our extra heavy solid east iron pump standards, which are suitable for wells of any depth and for short or long cylinders. They have spacious, oval-shaped reservoirs and the spouts are 3½ in. higher than on an ordinary pump.

All are equipped with superior tops and handles, which cannot be equalled for easy working, and have adjustable stroke from 6 to 9 in. They are also designed for power as well as hand use. All have wood handles.

Fig. 1180 illustrates the lift pump standard, for hand and power use.

Fig. 1182 illustrates the force pump standard, for hand or power use, with hose connection.

Figs. 1185 and 1339 illustrate force pump standards, for hand or power use, with hose connections.

They have bolted spouts, one plain—Fig. 1185—the other cock—Fig. 1339. Fig. 1339 has 1¼ in. back outlet. In case a straight spout is used with connection to tank from back outlet, a solid leather is used in the hose connection to close the spout.

Fig. 1339 Pump, with its cock spout, is the best made for use when there is a connection to back outlet, and where it is required to pump water both through the spout and back outlet, as it makes it possible to change from one to another in a moment.

Medium Cast Iron Standards

On Pages 29 to 33 inclusive are described and illustrated twenty different styles of pumps, all parts of which are interchangeable. With but a small stock of pump parts, it is possible to supply any one of these styles.

Fig. 1347 illustrates the Standard which is the same for all these Pumps. It is a strong, well designed casting, and is large enough to admit 2 in. pipe.



Standard Only.



Straight Spout Head.
Fig. 1348



Syphon Spout Head.
Fig. 1349

Figs. 1348 and 1349 illustrate the two styles of Spout Heads used, and are supplied for lift only, or with brass stuffing box for force, thus making four different Spout Heads. All are tapped for 2 in. well-pipe and are also equipped with an improved combination bushing, which in addition permits the use of either 1 $\frac{1}{4}$ or 1 $\frac{1}{2}$ in. well-pipe.

Below we illustrate five styles of handles and handle-bearers exactly similar to those used in the medium weight steel pipe pumps.

The Challenge and Reliance styles have iron handles, and the others wood. The Challenge top is designed for hand use only, both force and lift. All the rest are suitable for both hand and power use, both lift and force.

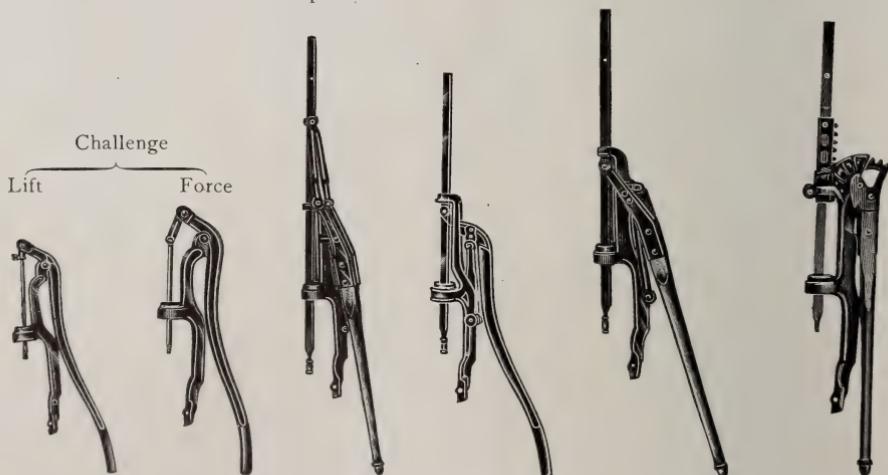
These pump standards should not be used with cylinders more than 4 inches in diameter.

Superior

Reliance

Perfection

Ratchet



Stroke 6 in.

Stroke 6 in.

Stroke 7 and 9 in.

Stroke 6, 7 and 9 in.

Stroke 7 and 9 in.

Stroke 7 in.

All Handle Bearers are designed for rigid connection to the pumps, both above and below the spout head. We strongly recommend the Challenge Top for lift pumps, and the Superior Top for force pumps, and also for combined hand and windmill use.

With only one base or stand, one each of the four spout heads and one each of the combined tops and handle bearers, any one of the twenty styles of pumps illustrated on Pages 29 to 33 inclusive, can be built.

Prices given on Pages 29 to 33 inclusive are for Standards only. For prices of Cylinders, pipe, etc., see lists on Pages 55 and 56.

Medium Weight, Cast Iron Standards

Challenge Top—For Hand Use Only

LIFT



Fig. 1083

Price - \$7.20

Code, Aged

Stroke 6 in. Weight 69 lbs.

Syphon Spout

FORCE



Fig. 1091

Price - \$8.40

Code, Agony

Stroke 6 in. Weight 71 lbs.

Challenge Top—Straight Spout

LIFT



Fig. 1218

Price - \$7.20

Code, Ahead

Stroke 6 in. Weight 69 lbs.

FORCE



Fig. 1220

Price - \$8.40

Code, Aimless

Stroke 6 in. Weight 71 lbs.

Medium Weight Cast Iron Standards

Superior Top. For Hand or Power Use

Syphon Spout

LIFT



Fig. 1162
Price - \$8.40
Code, Akimbo
Stroke 7 in. and 9 in.
Weight 74 lbs.

FORCE



Fig. 1164
Price - \$9.60
Code, Album
Stroke 7 in. and 9 in.
Weight 75 lbs.

LIFT



Fig. 1236
Price - \$8.40
Code, Alcove
Stroke 7 in. and 9 in.
Weight 74 lbs.

Superior Top

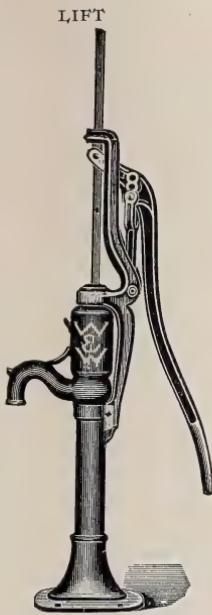
Straight Spout

FORCE



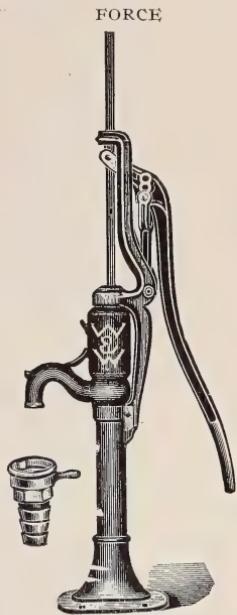
Fig. 1238
Price - \$9.60
Code, Algebra
Stroke 7 in. and 9 in.
Weight 75 lbs.

Medium Weight Cast Iron Standards



**Reliance Top
For Hand or Power
Use**

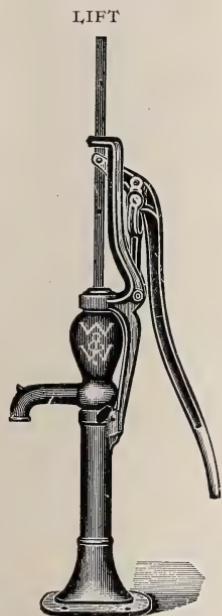
Syphon Spout



**Fig. 1093
Price - 9.60
Code Alimony**

Stroke 6 in., 7 in. & 9 in. Weight 78 lbs

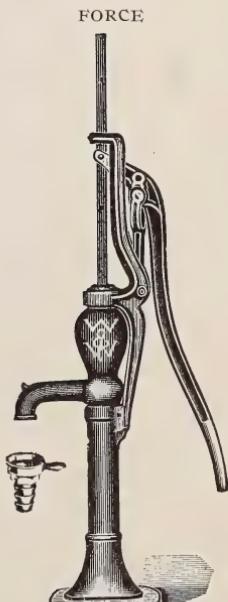
**Fig. 1085
Price - 8.40
Code, Alien
Stroke 6 in., 7 in. & 9 in. Weight 77 lbs.**



**Reliance Top
Straight Spout**

**Fig. 1224
Price - 8.40
Code Alkali**

Stroke 6 in., 7 in & 9 in. Weight 77 lbs.



**Fig. 1226
Price - 9.60
Code Allege**

Stroke 6 in., 7 in & 9 in. Weight 78 lbs

Medium Weight Cast Iron Standards

Perfection Top. For Hand or Power Use.

Syphon Spout



Fig. 1202
Price \$8.40
Code, Alley
Stroke 7 in. and 9 in.
Weight 70 lbs.



Fig. 1204
Price \$9.60
Code, Allot
Stroke 7 in. and 9 in.
Weight 71 lbs.

Perfection Top. Straight Spout.



Fig. 1230
Price \$8.40
Code, Almanac
Stroke 7 in. and 9 in.
Weight 70 lbs.

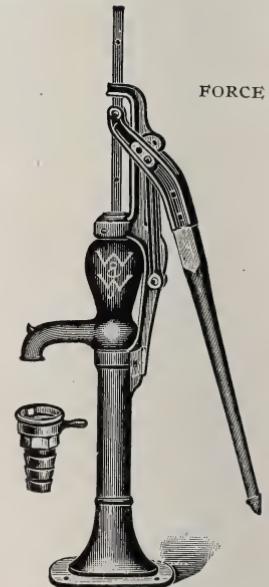


Fig. 1232
Price \$9.60
Code, Alone
Stroke 7 in. and 9 in.
Weight 71 lbs.

Medium Weight Cast Iron Standards

LIFT



Ratchet Top
For Hand or Power
Use

Syphon Spout

FORCE



Fig. 1210

Price - \$8.40
Code, Alpaca
Stroke 7 in. Weight 73 lbs.

Fig. 1212

Price - \$9.60
Code, Already
Stroke 7 in. Weight 74 lbs.

LIFT



Ratchet Top

Straight Spout

FORCE



Fig. 1242

Price - \$8.40
Code, Aloud
Stroke 7 in. Weight 73 lbs.

Fig. 1244

Price - \$9.60
Code, Alter
Stroke 7 in. Weight 74 lbs.

Medium Weight Cast Iron Standards

With Two-Way Spouts

**DESIGNED WITH AIR CHAMBER AND SPECIAL OUTLET FOR
DELIVERY TO OVERHEAD TANKS, ETC.**

These Standards are illustrated by Figs. 1248, 1192, 1247 and 1249 on the following page.

They differ from the other Medium Weight Cast Iron Standards in respect to the revolving spout heads. The spouts are bolted to the heads and each spout is equipped with a Double-faced Valve and an Air Chamber with outlet for connection to 1½ in. pipe.

Inside the Air Chamber is an inverted tin tube which allows free passage of water by way of the discharge at the top of the Air Chamber, and at the same time prevents the air from escaping.

The Two-Way Delivery Spout Standard will soon take the place of all the old-time back outlet standards, because of its marked advantages. These are as follows:—

First. One valve only is required to control the delivery of the water. When open, the water flows from the spout, but when closed the water is forced through the opening at the top of the Air Chamber.

Second. The Valve is situated in the most convenient position possible.

Third. The use of a single valve in place of the two—which are absolutely necessary in the case of back outlet pumps—makes the breakage impossible which always results if both valves of a back outlet are closed when the power is turned on.

Fourth. The spout is the natural outlet for the water, so any connection should be made to it. In this way there is not the inevitable difficulty of adjusting a jack to a back outlet standard because of the pipe for overhead connection being in the way.

Fifth. These Standards have real Air Chambers of large dimensions to take care of the shock caused by the up-strokes of the plunger, and cause a steady stream.

When specified, we will supply these Standards with two-way spouts, less air chambers, at a reduction of \$2.40 in the list price of each Standard.

Medium Weight Cast Iron Standards

SUPERIOR TOP

RELIANCE TOP

With Two
Outlets

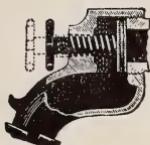
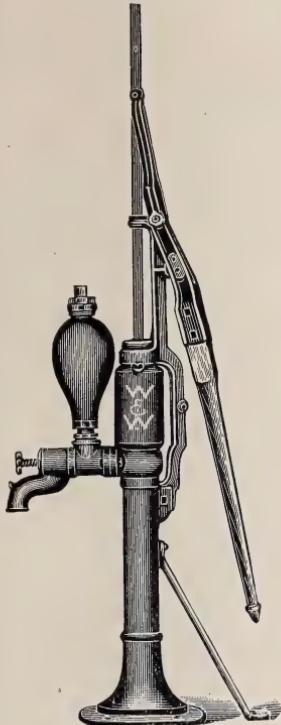


Fig. 1195

PERFECTION TOP



Fig. 1247

Price **12.60**
Code Altruism
Stroke, 7 in. & 9 in. Weight 90 lbs.

Fig. 1248
Price **12.60**
Code Alterant
Stroke 7 in. & 9 in.
Weight 93 lbs.

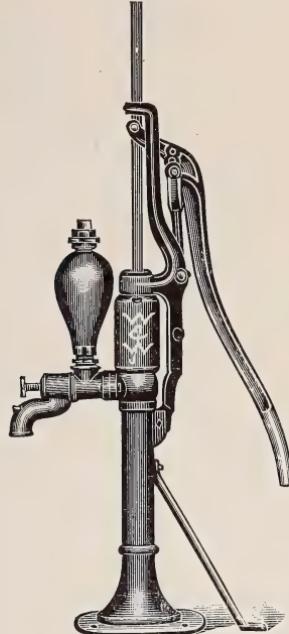


Fig. 1192

Price **12.60**
Code Altercate
Stroke 7 in. & 9 in. Weight 96 lbs.

RATCHET TOP

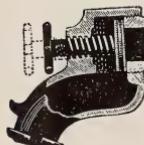


Fig. 1195

Cock Spout



Fig. 1249

Price **12.60**
Code Alvine
Stroke 7 in. Weight 92 lbs.

Heavy Weight Cast Iron Standards

For Lift Pumps only, for Shallow or Medium Deep Wells

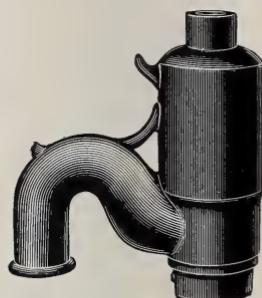
This line of heavy, big capacity Pumps described and illustrated below, and on Pages 37, 38 and 39, was designed to meet the demand for an outfit that would raise water from shallow or medium deep wells as fast or faster than the old wood pump, and these certainly do.



Fig. 1350
Standard only



Straight Spout Head



Syphon Spout Head

They are capacious enough to handle all the water that a cylinder 6 in. in diameter with a 10 in. stroke can draw. The Stand, Fig. 1350, is the same for all, and is large enough to admit 3 in. pipe.

These Standards may be used with cylinders up to 6 inches in diameter.

The line comprises two styles of Spout Heads, namely, Straight and Syphon, with immense reservoirs and outlets. They are tapped for 3 in. pipe, but with an improved combination bushing, either 2 in. or 2½ in. pipe can be used.

They are not designed to force water, as they are so great in capacity that it would require too much energy to force the large volume of water raised, to any height or distance.

The same five combined handle-bearers and handles are supplied with this line, as with the medium weight steel and cast iron standards.

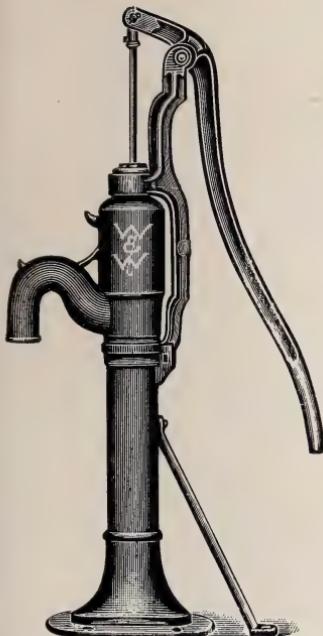
Challenge Superior Reliance Perfection Ratchet



Stroke 6 in. Stroke 7 in. and 9 in. Stroke 6 in. 7 in. and 9 in. Stroke 7 in. and 9 in. Stroke 7 in.

With the one base or stand, two spout heads and five tops, any one of the ten styles illustrated on Pages 37, 38 and 39 can be supplied. We recommend, however, the Syphon Spout with the Challenge Top for hand use only, and the Superior Top for combined hand and windmill use.

Heavy Weight Cast Iron Standards



Challenge Top
For Hand Use Only

SYPHON
SPOUT

Fig. 1087
Price - **\$10.80**
Code, Amber
Stroke 6 in.
Weight 95 lbs.

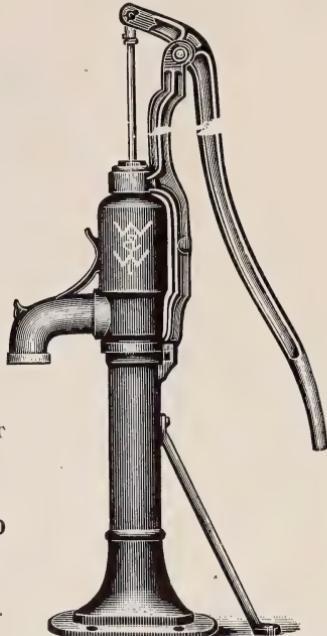


Fig. 1265
Price - **\$10.80**
Code, Amass
Stroke 6 in.
Weight 93½ lbs.



Superior Top
For Hand or Power Use

SYPHON
SPOUT

Fig. 1166
Price - **\$12.00**
Code, Ambit
Stroke 7 in. and 9 in.
Weight 100 lbs.



Fig. 1260
Price - **\$12.00**
Code, Amend
Stroke 7 in. and 9 in.
Weight 98½ lbs.

Heavy Weight Cast Iron Standards

Reliance Top

For Hand or Power Use



Fig. 1089

Price - - - \$12.00

Code, Amiable

Stroke 6 in., 7 in. and 9 in.

Weight 103 lbs.



Fig. 1264

Price - - - \$12.00

Code, Amends

Stroke 6 in., 7 in. and 9 in.

Weight 101½ lbs.

Perfection Top

For Hand or Power Use



Fig. 1207

Price - - - \$12.00

Code, Ammonia

Stroke 7 in. and 9 in.

Weight 96 lbs.



Fig. 1258

Price - - - \$12.00

Code, Amount

Stroke 7 in. and 9 in.

Weight 94½ lbs.

Heavy Cast Iron Standards
Lift Pumps for Shallow or Medium Deep Wells
Ratchet Tops

SYPHON SPOUT



Fig. 1215

Price - \$12.00
 Code Amplify
 Stroke 7 in. Weight 99 lbs.

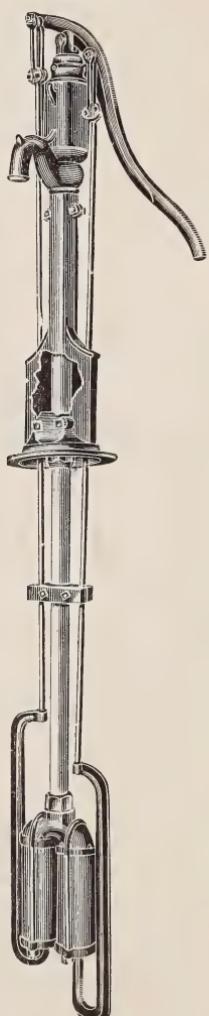
STRAIGHT SPOUT



Fig. 1262

Price - \$12.00
 Code Amulet
 Stroke 7 in. Weight 97½ lbs.

Fig. 1197



Double Acting Force Pump

Fig. 1197 illustrates the best Pump in the world to lift or force water from open wells of any depth. It has more points of real merit than any other three pumps built.

First: It is doubly double-acting, having two separate cylinders and two pump rods, pivoted, one on each side of the handle and fulcrum. It both draws and discharges water with every up as well as every down stroke of the handle, which truly makes it two complete pumps in one.

Second: An 1¼ in. pipe and spout on this pump will deliver as much water as a 2 in. pipe on single cylinder pumps, since the cylinders discharge water alternately and so keep up a steady stream.

Third: The cylinders must be submerged, so it is never necessary to prime the Pump.

Fourth: The Pump Rods are outside, so there is no pump rod churning the water, and causing friction in the pipe.

Fifth: The Pump is always in **perfect balance**. One cylinder balances the other, so that there is no unequal stress or strain either to pump standard or operator.

Double Acting Force Pump

Sixth: No Stuffing Boxes to cause friction and get out of order.

Seventh: It has a real air-chamber of large dimensions with no stuffing box or other opening to allow the air to escape.

Eighth: Only Galvanized Pipe, Pump Rod and Rod Couplings are used in this pump.

Ninth: Saves 50 per cent. of operator's time, as it pumps water twice as fast as ordinary pumps.

Tenth: It saves 50 per cent. of the labor, since the pump is in perfect balance.

Eleventh: It saves 50 per cent. of wear and tear, or in other words, the pump will last twice as long as others, because it requires only half the operation to supply the amount of water required.

Twelfth: It is the best anti-freezing pump ever designed. It never has to be thawed out if leak hole is open.

Thirteenth: The Leak-Hole can be bored as far down as desired to suit any possible climate or location.

Fourteenth: There is no Stuffing-Box in the Pump Standard to leak, and no rod to continually get coated with ice and stick so that the pump cannot be operated.

Fifteenth: It has a solid, close standard, forming an air-tight protection to the pump pipe against freezing winds.

Sixteenth: It has seamless, solid brass cylinders.

Seventeenth: The Pump is easily installed. First find the depth of the well from top of platform and cut the pipe so that it with the cylinders will be just one foot short of this measurement, to allow for the working of the plungers. After cutting the well-pipe to length and assembling it, set the handle and also the cylinder at half stroke. Couple up sufficient rod and cut off, leaving just sufficient to clamp in the clamps on the pump handle.

Eighteenth: It has a syphon spout which will not freeze since it will not drip.

Nineteenth: The standard protects the pump rods from the ice which is bound to form around the base of the pump during the winter.

This Pump is giving perfect service year after year, all through the intensely cold winter of the North-West, when nearly all other pumps freeze up. In addition to this, its other advantages place it far in advance of other pumps for any climate.

SIZES AND PRICES.

Fig. and No.	Size of Pipe Inches	Size of Cylinder Inches	Stroke Inches	Weight Lbs.	Code	Price with Brass Body Cylinder
Fig. 1197—No. 3	1 1/4	3	6	105	Anagram	\$21.60
Fig. 1197—No. 4	1 1/4	3 1/2	6	110	Analyse	22.20
Fig. 1197—No. 5	1 1/2	3 1/2	6	110	Anchor	23.40

Branch Pipe Double-Acting Force Pump Standards

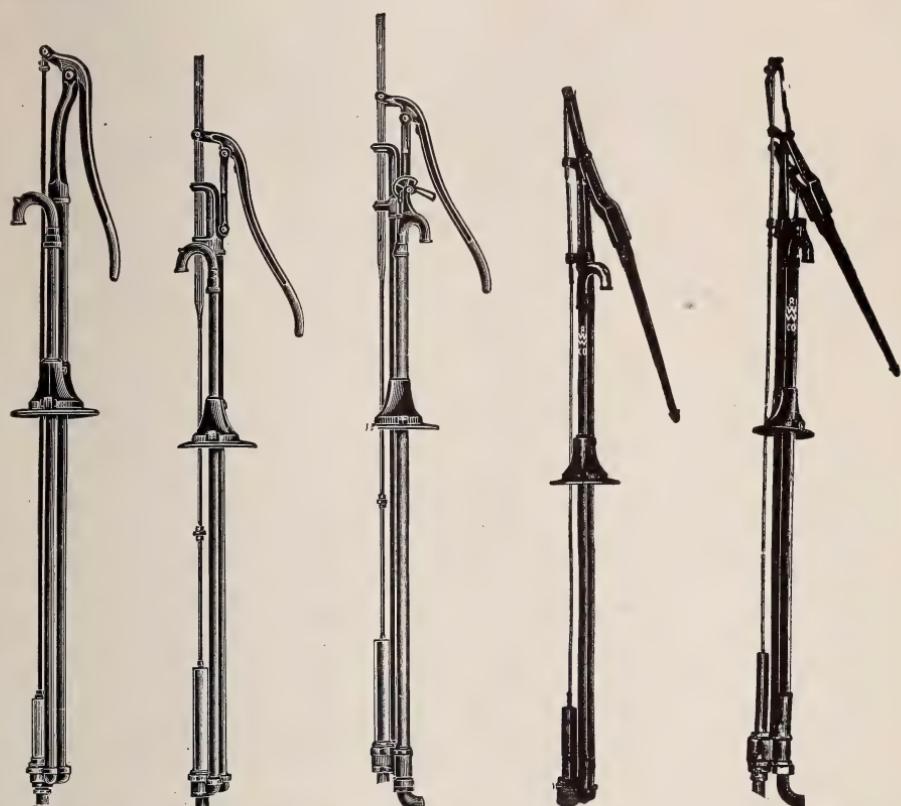


Fig. 1328
Code, Anguish
Stroke 7 in.
Weight
74, 88 and 90 lbs.

Fig. 1329
Code, Animal
Stroke 7 in.
Weight
74, 88 and 90 lbs.

Fig. 1327
Code, Anklet
Stroke 7 in.
Weight
91, 102 and 104 lbs.

Fig. 1331
Code, Anneal
Stroke 7 in. and 9 in.
Weight
83, 98 and 100 lbs.

Fig. 1330
Code, Annex
Stroke 7 in. and 9 in.
Weight
87, 98 and 100 lbs.

SIZES AND PRICES.

Fig. Nos. and Sizes	Figs. 1329 and 1331.	Figs. 1327 and 1330.	Fig. 1328
	No. 1. No. 2. No. 3.	No. 1. No. 2. No. 3.	No. 1. No. 2. No. 3.
Price with 3 ft. set length.....	\$13.60 \$14.60 \$15.20	\$17.20 \$18.00 \$18.60	\$12.40 \$13.40 \$14.00
Price with 6 ft. set length.....	15.10 16.10 16.70	18.70 19.50 20.10	13.90 14.90 15.50
Diam. packing tube in inches.....	1 $\frac{1}{4}$ 1 $\frac{1}{2}$ 2	1 $\frac{1}{4}$ 1 $\frac{1}{2}$ 2	1 $\frac{1}{4}$ 1 $\frac{1}{2}$ 2
Diam. spout in inches.....	1 1 $\frac{1}{2}$ 1 $\frac{1}{2}$	1 $\frac{1}{4}$ 1 $\frac{1}{2}$ 1 $\frac{1}{2}$	1 1 $\frac{1}{2}$ 1 $\frac{1}{2}$
Diameter discharge pipe.....	1 1 $\frac{1}{2}$ 1 $\frac{1}{2}$	1 $\frac{1}{4}$ 1 $\frac{1}{2}$ 1 $\frac{1}{2}$	1 1 $\frac{1}{2}$ 1 $\frac{1}{2}$
For use with cylinder up to.....	3 3 $\frac{1}{2}$ 4	3 3 $\frac{1}{2}$ 4	3 3 $\frac{1}{2}$ 4

These Standards are called "Branch Pipe" because they are constructed by using two branch pipes connected together, and also in turn connected to the well-pipe by means of a heavy branch coupling.

The Pump Rod is outside of both these pipes, but passes down through an inverted brass cylinder, which is also carried by the branch coupling. In this cylinder are three inverted leathers or plunger buckets, which are self expanding. Some of the marked advantages of this style of pump are as follows:—

First: All the working and other parts which frost would interfere with or injure, including vertical three-way valve, plunger tube, branch connection, and connection to underground supply, are below the frost line and leak hole. The Plunger Leathers being below the frost line, the frost can never freeze them hard, and if they ever do leak a little, the water that escapes will simply fall back into the well. There will be no trouble with frozen stuffing boxes.

Branch Pipe Double Acting Force Pump Standards

For Pumping Water by the Underground Frost Proof Method

Second: The long 1½ in. pipe which carries the top and handle-bearer, forms a perfect air-chamber of sufficient capacity to cushion the stroke under the greatest pressure.

Third: The water pipe from the branch coupling up is free of the pump rod.

Fourth: By means of the malleable iron cam lever on the spout, the water can instantly be directed either underground or to the spout.

Fifth: The Base consists of two heavy castings, rigidly bolted to both pipes which compose the Standard, and it allows vertical adjustment of the standard by loosening the bolts.

Sixth: By removing the Union Nut on elbow connection to underground supply, the three-way valve can be quickly removed for repairs without disturbing the pump.

Seventh: All water ways and openings are large enough to handle all the water from the largest cylinders it is practical to use.

Eighth: The Underground Discharge is located well below the frost line, so that water can be forced to the house or yard all winter without danger of injury to the pump pipe and connections, even in the coldest climate.

Ninth: The Flange Union at the bottom is tapped for 2 in. pipe and is provided with a bushing, reducing it to either 1½ in. or 1¼ in.

Tenth: The Cam Lever cannot stick, and is so arranged that it takes up all wear without adjusting.

Eleventh: The Double Faced Three-Way Valve is so designed that the pressure always forces it to its seat, no matter whether water is being pumped through the spout or through the underground connection.

Twelfth: The Cylinder can be attached with a close nipple to the three-way casting for shallow wells, or at any distance down for deep wells.

Thirteenth: There is no stuffing box to leak, or piston rod to freeze. In place of them this standard is fitted below the frost line with drawn brass tube, with three inverted leather plungers, which cause little friction, and also makes the pump double-acting, and to that extent decreases the jar of the up-stroke.

Fourteenth: The stuffing box tube is the largest that can be used under heavy pressure without buckling the pump-rod or windmill bar.

We recommend the Superior Top, as it is the easiest working. It has a wood-handle.

Fig. 1328 represents a Double-Acting Branch Pipe Force Standard, for hand use only. The three-way cock can be added to this standard in case it is desired to pump water by hand to some distant point by the underground frost-proof method.

Fig. 1329 represents a standard similar to Fig. 1328, with the addition of a windmill head.

Fig. 1327 represents a Double-Acting Underground Three-Way Branch Pipe Force Standard for hand and power use.

Fig. 1331 represents a Double-Acting Branch Pipe Force Standard for hand and power use. It is fitted with the high-grade, easily worked Superior Top with wood handle.

Fig. 1330 represents a Double-Acting Branch Pipe Three-Way Underground Force Standard for hand and power use. It is also fitted with the unequalled Superior Top and wood handle.

The underground discharge is tapped for 1¼ in. pipe, and a bushing is also sent so that 1 in. pipe may be used in discharge if desired.

The above Pumps are all strongly and compactly built, being made almost entirely of steel and malleable iron.

Anti-Freezing Three Way Combined Hand and Wind Mill Force Pumps

SUPERIOR TOP



Fig. 1252

Price - **\$19.20**
Code, Ancient
Stroke 7 in. and 9 in.
Weight 122 lbs.

RELIANCE TOP



Fig. 1250

Price - **\$19.20**
Code, Andiron
Stroke 6 in., 7 in. and 9 in.
Weight 125 lbs.

PERFECTION TOP



Fig. 1251

Price - **\$19.20**
Code, Anew
Stroke 7 in. and 9 in.
Weight 118 lbs.

RATCHET TOP



Fig. 1253

Price - **\$19.20**
Code, Angler
Stroke 7 in.
Weight 123 lbs.

Figs. 1250 to 1253, inclusive, illustrate a Pump Standard with four styles of heads and handle-bearers, designed to meet every requirement necessary to make a perfect anti-freezing, combined underground and spout delivery, hand and windmill, force and lift pump with capacity and strength enough for deep or shallow wells, also for powerful windmills and gasoline engines.

The standard and discharge are both made of $1\frac{1}{2}$ in. pipe. The packing tube has an inside diameter of $1\frac{1}{4}$ in. By means of a flange union at the bottom of the standard, the well pipe is tapped for 2 in. pipe. It is fitted with bushing, reducing it to $1\frac{1}{2}$ and $1\frac{1}{4}$ in. $1\frac{1}{4}$ in., $1\frac{1}{2}$ in. or 2 in. well pipe can be used as desired.

The prices given above cover 3 feet of set-length. For 6 feet add \$1.50 to the list price.

The following list of features shows how perfect this Pump is for the purpose:

First: It is really a Branch Pump. It includes all the advantages of the Branch Pumps listed on pages 40 and 41, except No. 5, as well as those specially its own. Note the heavy stand, to which the pump-pipes and tops are attached so rigidly that no windmill or engine can separate them.

Anti-Freezing Three Way Combined Hand and Wind-Mill Force Pumps

Second: The Underground Discharge is located well below the frost line, so that water can be forced to the house or barn all the winter, without danger of injury to the pump-pipe and connections, even in the coldest climate. The underground discharge is tapped for $1\frac{1}{4}$ in. pipe, and a bushing is sent so that 1 in. pipe may be used in discharge is desired.

Third: By means of the malleable iron Cam Lever on the spout, the water can instantly be directed either underground or through the spout.

Fourth: By removing the Union Nut on elbow connection to underground supply, the three-way valve can be quickly removed without disturbing the pump.

Fifth: All water ways and openings are large enough to handle all the water from the largest cylinders it is practical to use.

Sixth: The Flange Union at the bottom is tapped for 2 in. pipe and provided with bushing, reducing it to either $1\frac{1}{2}$ or $1\frac{1}{4}$ in., thus there is no necessity of carrying several styles of pumps in stock.

Seventh: One pipe of this standard, $1\frac{1}{2}$ in. by 6 ft. long, forms a perfect air-chamber of sufficient capacity to cushion the stroke for the heaviest pumping.

Eighth: There are four styles of Combined Hand and Windmill Heads, allowing a variety of strokes.

Ninth: This Pump Standard is well constructed in every detail and symmetrically designed.

Tenth: There is no Stuffing Box to leak or Piston Rod to freeze. In place of them this standard is fitted below the frost line with a $1\frac{1}{4}$ in. drawn brass tube, with an inverted leather plunger, which causes little friction and also makes the pump double acting, and to that extent decreases the jar of the up stroke.

Eleventh: The Cam Lever cannot stick, and is so arranged that it takes up all wear without adjusting.

Twelfth: The Cylinder can be attached with a close nipple to the three-way casting for shallow wells, or at any distance down for deep wells.

Thirteenth: The Pump Rod is outside the pipe, so that it cannot churn the water or cause friction.

Fourteenth: The $1\frac{1}{4}$ in. stuffing box tube is the largest that can be used under heavy pressures without buckling the pump rod or windmill bar.

Fifteenth: These Pumps are all fitted with a leak hole so that the water may be drained off, and so prevent the pump from freezing up.

Sixteenth: Where desired, a hose connection can be used with these pumps.

Seventeenth: The Double-Faced Three Way Valve is so designed that the pressure always forces it to its proper seat, no matter whether water is being pumped through the spout or through the underground connection.

Eighteenth: These Pumps are painted green and finished in red and gold. They are very handsomely designed, so that they look well and also work well.

Steel Pipe Pumps

Figs. 1325 and 1326 illustrate strong durable pump standards built almost altogether of steel pipe and having first class pipe air chambers.

These are Force Pumps only. They have 8 in. and 10 in. strokes and the easy-working Superior Top. These handle links exert a more direct lift than any other on the market, thus saving wasted energy due to side pressure.

As will be noted from the illustrations these pumps have wood handles.

For use with windmill or other power a threaded flat bar is screwed into the crosshead at the top of the pump.

Fig. 1325 is built of $1\frac{1}{4}$ in. pipe.

Fig. 1326 is built of $1\frac{1}{2}$ in. pipe.



Fig. 1325

Price - \$7.80

Code, Abject

Stroke 8 in. and 10 in. Weight 64 lbs
For Cylinders up to 3 in. Diam.



Fig. 1326

Price - \$8.40

Code, Able

Stroke 8 in. and 10 in. Weight 66 lbs.
For Cylinders up to 3 1/2 in. Diam.

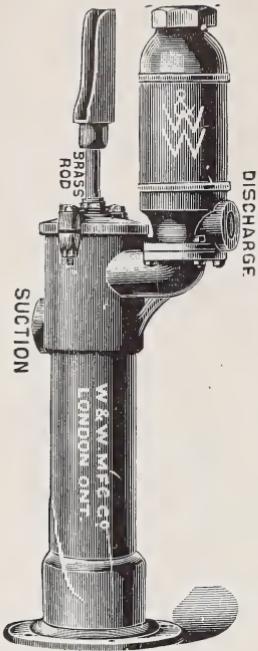


Fig. 1150

The London Syphon Pump

PRICES OF FIG. 1150

Diameter of Cylinder.	Weight Lbs	Price
2½	83	\$20.40
3	84	21.60
3½	85½	22.80

Code:—Annoy.

Stroke:—12 inches.

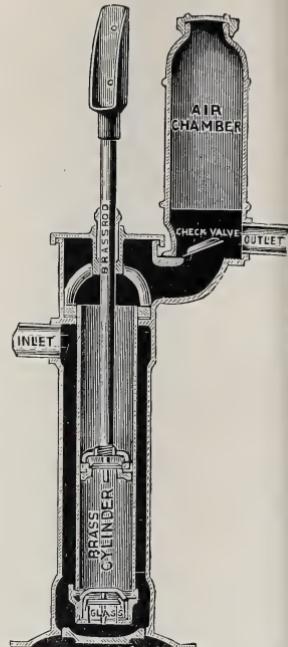


Fig. 1151

Fig. 1150 represents a Pump for power use which must never be exposed to frost, but which cannot be excelled for certain special uses in connection with windmill or other power. For example, it is the best pump to use in frost-proof buildings, where it can be placed not more than twenty-four feet above the water, for pumping to a storage tank; or it cannot be beaten for use in wells when placed below the frost line to supply water to an underground pipe line, which is also below the frost line.

See the cross section of this Pump as shown in Fig. 1151.

The advantages of this Pump are as follows:—

First: The Pump is complete in itself, and is compactly built into the smallest possible space.

Second: The Air-Chamber is a separate piece of large capacity which can be bolted to the Pump so as to give the discharge different positions as desired.

Third: The Cap, which is secured by four bolts, can be removed and all the working parts taken out, without disturbing the Pump or the suction and discharge pipes.

Fourth: The Pump has a drawn brass cylinder, brass valve cap, brass valve seat, brass plunger and piston rod, and large brass packing box.

Fifth: The Inlet or Suction Pipe is situated above the bottom of the cylinder. The water, after entering the body of the Pump, has to go down to the bottom of the brass inner tube before it can enter the cylinder, so that after the Pump is once primed, the cylinder and valve are always submerged, and will never need further priming. This feature gives the Pump its name of "Syphon."

Sixth: The Check Valve in the outlet is a desirable feature when pumping to elevated tanks. The cylinder allows for 12 in. stroke, the suction is for 1½ in. pipe, and the discharge the same.

Low Down Tank Pump

CAPACITY—TWO BARRELS PER MINUTE.

Fig. 1042 represents our Low Down Tank Force Pump. The name describes it very well, as it is so constructed as to be **low down** on top of the tank. The cylinder is in a horizontal position. By this construction we gain great strength and simplicity.



Fig. 1042

It has less pieces than any other Tank Pump. Weight, 95 lbs.

The cylinder is 5 inches in diameter, accurately bored, and has 5-inch stroke, with 2-inch openings for suction and discharge. The plunger is solid, no valves to get out of order, and moving it in the cylinder forms a suction which fills the cylinder, and at the same time drives water out at the other end. Then, on return stroke, this water is driven out and cylinder is refilled from opposite end.

The spout is attached to top of pump, is reversible and is so arranged that the largest pail can be placed under it—thus avoiding the trouble of attaching discharge hose when you desire a pail of water.

Has a capacity of two barrels per minute. It has a powerful force and will throw water 60 feet from the point of the nozzle.

The valve seats are of brass and practically indestructible. The check valves are of metal, faced with rubber, and so arranged that by removing nut on top of pump anyone can replace the rubber facing in a very short time, practically making a new pump of it.

It is guaranteed to do good work and will please threshermen who desire a simple, strong and durable pump.

This Pump is Practicable for the Following Purposes:

Filling threshers tanks, washing out boilers, for use in shallow stock wells, draining cellars and barnyards, irrigation purposes, washing wagons, windows, etc., spraying fruit trees, putting out fires, and general use about the farm.

As a protection against fire, it is without a rival.

It is fitted with two drip cocks to drain cylinder and valve chambers in frosty weather.

PRICE LIST REPRESENTED BY FIG. 1042.

Fig. 1042, with hose nipple, hose attachment, hose band and strainer.	Price...\$12.00
Fig. 1042, with brass-lined cylinder.....	18.00
Two-inch Spiral-wire Rubber Hose, per foot.....	1.20

Fifteen and twenty foot lengths only kept in stock.

Low Down House and Factory Double-acting Force Pump

WITH BRASS-LINED CYLINDER

Fig. 1113 represents our Low-down Double acting House Force Pump, which is built in the same manner as our Low-down Tank Pump, and is very compact and strong.

The cylinder is $3\frac{1}{2}$ inches in diameter, brass-lined, has 4-inch stroke, with $1\frac{1}{2}$ -inch openings for suction and $1\frac{1}{4}$ inch discharge on both sides of cylinder. We plug one set of openings so that suction or discharge can be used on either side, or two pipes can be run from pump, one to supply water at pump, the other in tank or any place in building.

The valve seats are of brass, and practically indestructible. The check valves are of metal, faced with rubber, and so arranged that by removing nut on top of pump any one can replace the rubber facing in a very short time, practically making a new pump of it. The pump is double acting, taking and discharging water on both strokes of the lever.

It has brass piston rod and large stuffing box; the openings are large, permitting free passage of the water. It is designed for use in basements for forcing water into an elevated tank, or drawing water from springs and forcing to an elevation for use about factories, mills or warehouses, and also very convenient on board vessels; is fitted for pipe, but can be furnished with hose connection when ordered.



Fig. 1113

Price - \$19.20
Code, Anodyne
Stroke $3\frac{1}{2}$ in. Weight 43 lbs.

The London Combination Countershaft Attached to Packing-box Head

Fig. 1152 represents our New Combination Countershaft, which is either back-gearred $3\frac{1}{2}$ to 1—i.e., it takes three revolutions of the drive wheel to make one stroke of the pump—or can be changed to direct stroke by removing the pinion and sliding the driving shaft through the frame and placing the crank wheel on the main shaft, at the option of the user. In making the direct stroke, we suggest you place the main shaft in bearings nearest the base. This arrangement is not found in any other countershaft on the market, and will be found a great advantage to both dealer and user, as it really combines two machines in one.

The stroke can be adjusted from two to ten inches, as may be required. This is accomplished by sliding the wrist pin in the slot shown on the crank wheel. The wrist pin is composed of two pieces, viz., a heavy bolt and steel bushing, which can be replaced by any blacksmith. This is a very desirable feature, as it is really the only piece that is liable to wear, and saves lost time in sending to the factory for repairs. It is fitted with $1\frac{1}{4}$ -inch drawn steel shafting. The entire arrangement is very simple, neat and strong. It makes a convenient outfit for pumping or driving any light machinery, and can be used in any position, either horizontal or vertical. Can be used on the floor, against posts or wall, or on the ceiling.

This illustration shows how it can be attached to the pumping outfits.

PRICE LIST—FIG. 1152.

Fig. 1152, fitted with tight and loose pulleys, 12 inches in diameter and 3 inch face.

Price. \$24.00

Fig. 1153 represents our Deep-Well Crosshead, with double guide and power attachment. It has double rod guide to keep the crosshead and piston in line with stuffing-box; has 2-inch discharge in base plate. The bottom of the base is tapped for 3-inch connecting pipe. The piston rod is threaded for $\frac{3}{8}$ -inch pipe or wood rod connection. The power attachment is hinged and arranged to fit actuating rod of windmills. It is equipped with heavy brass stuffing-box, and especially adapted for forcing water long distances. An air-chamber may be constructed of pipe, on the discharge, if desired. This head may be used with any size cylinder by bushing the opening of base to the size of the pipe. When ordering, state size you wish to use.

PRICE LIST—FIG. 1153.

Price—Complete, as shown in cut. \$12.00

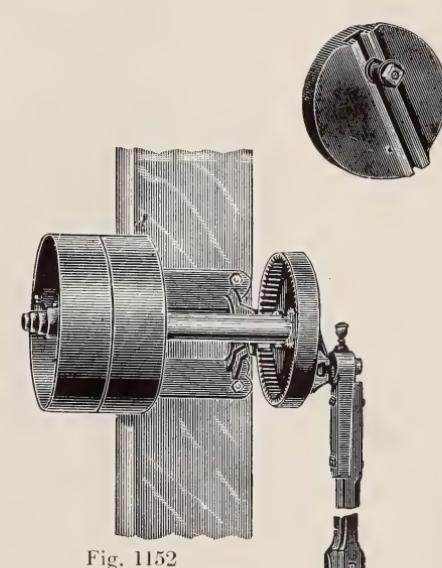


Fig. 1152

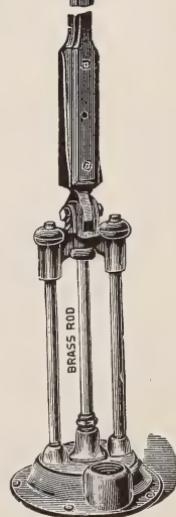


Fig. 1153

BT Vertical Pump Jacks

BT. Jacks are called vertical, because the shaft which operates the pump rod is directly above the driving shaft which carries the belt pulleys. This arrangement makes a compact self-contained jack possible. It does not require support as do other styles. In the case of jacks with both shafts on the same level, the pinion, or driving shaft, exerts a stress on the bottom of the crank shaft bearing, equal to the stress caused by the combined weights of the pump rod and the water in the pipes, thus doubling the wear on the bearing. In the case of the BT. vertical pump jacks, these stresses are exerted against different quarters of the crank shaft bearing, therefore this bearing will last twice as long.

Figs. 1335 and 1343 represent the BT. Extra Heavy and the BT. Standard Pump Jack respectively. These are designed to operate any style of pump that has a flat bar or windmill head. Both Jacks are equipped with drawn steel shafts, turned steel wristpins, adjustable side bars, heavy gears and pinions and tight and loose pulleys.

Note the strong circular bases, large enough to encircle the largest pump base, and also to carry the jack without outside support. Both bases have holes in them, by means of which they can be securely bolted to the pump platform, and also have clips to bolt the pump standards to them so that the pumps cannot be lifted off their platforms by the upstrokes of the jacks.

Fig. 1335 Jack has steel side bars adjustable for different heights of standards by means of extra bolt holes in the lower ends of the side bars.

Fig. 1343 has wood side bars, adjustable for different heights of standards by means of clamps at the upper ends of the side bars.

The crosshead of either jack can be disconnected from the pump bar and the pump handle operated without removing the jack.

Fig. 1343 can be used without the base, but in this case a steel leg must be used to steady the side next to the tight and loose pulleys, and also an extra clamp to secure the jack to the standard.

Vertical Pump Jack

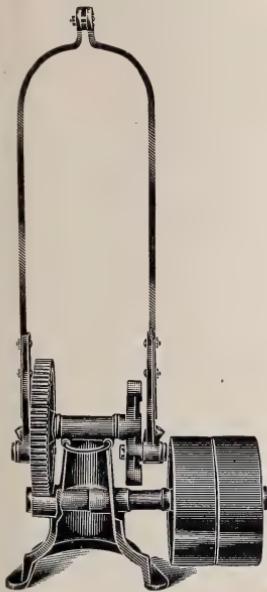


Fig. 1337 (Anthem)

Price with fast and loose pulleys \$20.00

Price with single pulley \$18.00

Weight 123 lbs.

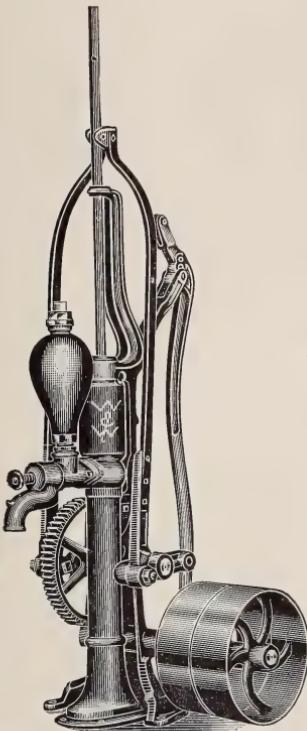


Fig. 1052

Back Geared, 6 to 1
Three Strokes,
5 in., 7 in. and 10 in.
Tight and Loose Pulleys
3 in. Face and 12 in. in Diameter

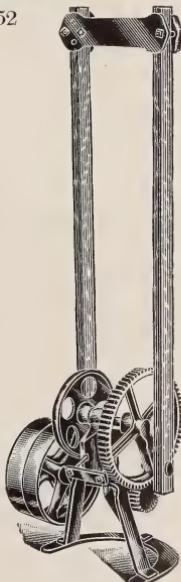


Fig. 1343

Standard Vertical Pump Jack

Back Geared, $4\frac{1}{2}$ to 1

Three Strokes, 5 in., $7\frac{1}{2}$ in. and 10 in.

Tight and Loose Pulleys

2 $\frac{5}{8}$ in. Face and 12 in. in Diameter

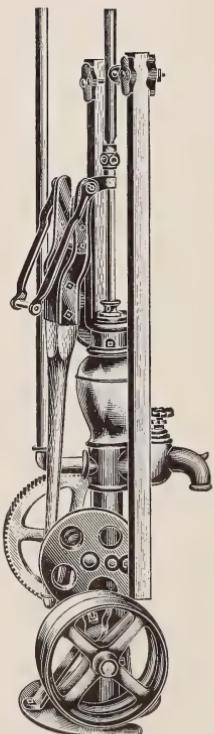


Fig. 1344

List, without stand, \$12.00. Code—Axial.

Weight 60 lbs.

List, with stand, \$14.00. Code—Apogee.

Weight 75 lbs.

Horizontal Pump Jack

Fig. 1338 represents a Pump Jack designed to operate Figs. 1042 and 1113 Pumps. It is designed with a solid base or platform, in one piece with the boxings.

Fig. 1054 shows Fig. 1338 with a Fig. 1042 Low Down Tank Pump mounted and connected to it. It is fitted with tight and loose pulleys, which are 12 in. in diameter and have 4 inch face. It is back geared 6 to 1, and has two strokes, $3\frac{1}{2}$ in. and 5 in.

For direct connection to a gasoline engine, a gear is supplied in place of the belt pulleys.

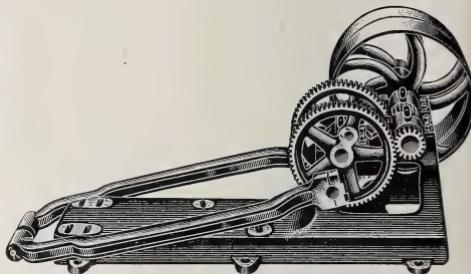


Fig. 1338 (antique)
Weight 147 lbs.

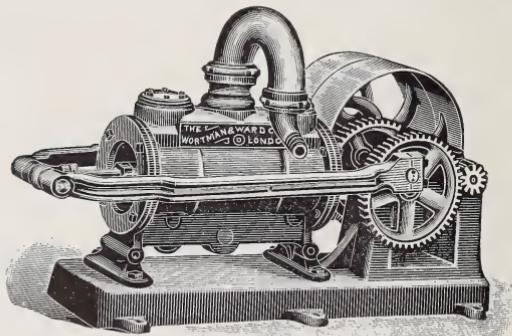


Fig. 1054

Fig. 1338 only, with tight and loose pulleys.....	\$30.00
Fig. 1338 and Fig. 1042 Low Down Tank Pump combined	42.00
Fig. 1338 and Fig. 1113 Tank Pump combined.....	49.00

Yard and Lawn Hydrants

Fig. 1103 represents the Geyser, and Fig. 1191 the Excelsior.

Both these Hydrants combine two very important and superior points of excellence, namely, a large free water passage, from inlet at the bottom to outlet at the spout, and means of opening and closing without the usual stuffing-box, which, when exposed in winter, freezes, and must be thawed each time before using.

In both these Hydrants, the water does not come in contact with the rod that operates the valve that opens and closes the inlet. Hence there is nothing to freeze, and they are therefore always ready for use.

The pipe through which the plunger rod works, is open at the top and large enough to allow the plunger to be withdrawn at any time to replace the leather packing. A leak hole, which is open only when the inlet is closed, lets all the water out of the discharge pipe when the flow of water is shut off.

The above features make these Hydrants very desirable, either for lawn service or for use in exposed places in winter.



Fig. 1103. Price, \$6.00
Code, Abb. Weight 30 lbs.



Fig. 1191. Price, \$7.20
Code, Antler. Weight 32 lbs.

Windmill Cylinder Force Pump



Fig. 1057

Fig. 1057 can be bolted to a wall or any solid substance, and is a complete Pump in itself, but is calculated for wells not more than 25 feet deep; is tapped at the bottom for 1 $\frac{1}{4}$ inch pipe and at the top for 1-inch pipe.

PRICES.

No. 1—3 x 12 Cylinder.....	\$ 7.80
No. 2—4 x 12 Cylinder.....	8.90
Fig. 1153.....	12.00

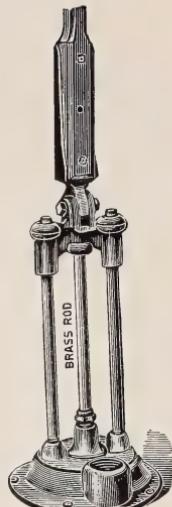


Fig. 1153

Packing-box Heads For Deep Well Force Pumps



Fig. 1058

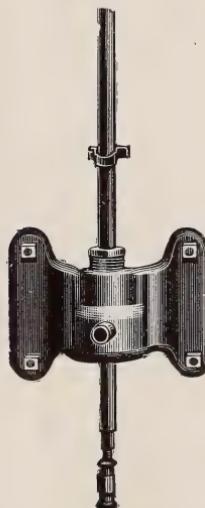


Fig. 1154



Fig. 1112

SIZES AND PRICES.

Sizes—	1 $\frac{1}{4}$ and 1 $\frac{1}{2}$ in.	2 inches
Fig. 1058.....	\$4.80.....	\$4.80
Fig. 1112.....	3.60.....	4.20
Fig. 1154.....	6.00.....	6.00

The BT Pump Cylinders

Since the cylinder is by far the most important and the absolutely necessary part of any Pump, we specialize on cylinders.

THE CAPS are heavy and have strong, deep threads.

THE SHELLS, whether iron or brass, are extra strong and also well threaded to fit the caps perfectly. The inner surface of every all-iron cylinder is polished like glass. This eliminates practically all the friction and wear on the plunger leathers, which must always take place when the rough tool marks are left inside the cylinder.



Fig. 1116

ALL WATER-WAYS AND OPENINGS are designed to allow free passage for the water.

THE LOWER VALVE is of the hinged type and never fails in its operation.

THE PLUNGER VALVE is of the most improved poppet design.

THE PLUNGER CAGES in all our cylinders are malleable iron and are galvanized.

THE PLUNGER FOLLOWERS are either galvanized iron or brass.

We recommend the combination of galvanized malleable iron cage and brass follower as ideal. Since the cages require to have great strength, we make them of malleable iron and galvanize them to prevent rust. By using a brass follower, the cage and follower do not get rusted together, and can be separated at any time for a new cup.

THE LEATHERS are made from the best grade of oak tanned stock, and are correct in form and thickness. They are described in detail on pages 55 and 56.

Brass lined cylinders are finished in red. Brass body cylinders, of course, show the brass. Brass-lined and brass bodied cylinders have galvanized caps unless brass body cylinders with brass caps are ordered. Iron cylinders are finished in black with black caps.



Fig. 1117

The BT Plungers



Fig. 1107

Single Leather Plunger



Fig. 1340

Double Leather Plunger



Fig. 1108

Single Leather Plunger with $1\frac{1}{4}$ in. Follower



Fig. 1110

Double Leather Plunger with $1\frac{1}{4}$ in. Follower

The above Plungers can be made with three or four leathers if desired.

For the same stroke Figs. 1108 and 1340 require a cylinder 1 inch longer than that required for Fig. 1107. For the same stroke, Fig. 1110 requires a cylinder 2 inches longer than Fig. 1107. Cylinders are always fitted with Fig. 1107 Plungers unless otherwise ordered.

Extra for Brass Valve Seats up to 3 in. in diam.....	20c
Extra for Brass Valve Seats above 3 in. in diam.....	30c

Price List of Outside Cap Cylinders. Fig. 1117

Diam. in Inches	Length in Inches	Tapped for Pipe	Maximum Working stroke in Inches	Wgt. 107 pl'gr	All Iron Lbs.	Price with Cages	Brass, lined with gal. and Brass Fol- lowers and Valve Seats	Price, iron Caps and Plunger Cages	Brass Body Gal. Iron with Brass Caps	Price, Brass Body with Brass Caps
2½	10	1¼	8½	10½	\$2.60	\$ 5.76	\$ 5.10	7.35		
3	10	1¼	8½	12	3.00	6.48	5.85	8.10		
3½	10	1½	8½	14	4.20	7.56	6.90	10.05		
4	10	2	8½	15½	5.40	9.36	9.30	12.90		
4½	10	2	8½	20½	7.50	14.40	13.50	.....	
5	10	2½	8½	.....	9.90	19.08	18.00	.....	
6	10	3	8½	.....	14.40	28.80	27.00	.....	
2½	12	1¼	9½	12	3.60	6.12	5.85	7.65		
3	12	1¼	9½	13½	4.20	6.84	6.60	8.40		
3½	12	1½	9½	15½	5.40	8.10	8.25	10.50		
4	12	2	9½	16¾	6.90	10.26	10.80	13.50		
4½	12	2	9½	22	9.00	15.84	15.60	.....	
5	12	2½	9½	27	12.00	21.60	21.00	.....	
6	12	3	9½	37½	15.10	32.40	30.00	.....	
2½	14	1¼	11½	13	3.90	6.66	6.30	8.85		
3	14	1¼	11½	15½	4.50	7.38	7.05	9.75		
3½	14	1½	11½	16½	6.00	8.82	8.85	12.60		
4	14	2	11½	19	7.80	11.34	11.40	15.90		
2½	16	1¼	13½	13	4.20	7.38	7.05	9.60		
3	16	1¼	13½	16½	4.80	8.10	7.65	10.35		
3½	16	1½	13½	19	6.75	9.72	9.60	13.35		
4	16	2	13½	21¼	8.70	12.60	12.30	16.80		
2½	18	1¼	15½	14½	4.50	8.10	7.65	10.20		
3	18	1¼	15½	18	5.10	8.82	8.25	10.95		
3½	18	1½	15½	20½	7.50	10.62	10.35	14.10		
4	18	2	15½	24¼	9.60	13.86	13.35	17.85		
2½	20	1¼	17½	16	5.10	8.82	8.10	10.65		
3	20	1¼	17½	20	5.70	9.54	8.85	11.55		
3½	20	1½	17½	22½	8.10	11.70	11.40	15.15		
4	20	2	17½	26½	10.20	15.12	14.40	18.90		

Price List of Inside Cap Cylinders. Fig. 1116

Diam. in Inches	Length in Inches	Tapped for Pipe	Maximum Working stroke in Inches	Wgt. 107 pl'gr	All Iron Lbs.	Price with Cages	Brass, lined with gal. and Brass Fol- lowers and Valve Seats	Price, iron Caps and Plunger Cages	Brass Body Gal. Iron with Brass Caps	Price, Brass Body with Brass Caps
2	12	1¼	6	10¼	\$3.30	\$ 5.90	\$ 5.60	\$ 7.40		
2½	12	1¼	8	12	3.60	6.12	5.85	7.65		
3	12	1¼	8	13¼	4.20	6.84	6.60	8.40		
3½	12	1½	8	15¼	5.40	8.10	8.25	10.50		
4	12	2	8	16¼	6.90	10.26	10.80	13.50		
4½	12	2	8	21½	9.00	15.84	15.60	.....	
5	12	2½	8	26	12.00	21.60	21.00	.....	
6	12	3	8	36	15.10	32.40	30.00	.....	
2	14	1¼	8	10½	3.60	6.40	6.00	8.50		
2½	14	1¼	10	12½	3.90	6.66	6.30	8.85		
3	14	1¼	10	14½	4.50	7.38	7.05	9.75		
3½	14	1½	10	16	6.00	8.82	8.85	12.60		
4	14	2	10	19½	7.80	11.34	11.40	15.90		
2	16	1¼	10	11	3.90	7.00	6.80	9.30		
2½	16	1¼	12	13	4.20	7.38	7.05	9.60		
3	16	1¼	12	15½	4.80	8.10	7.65	10.35		
3½	16	1½	12	17½	6.75	9.72	9.60	13.35		
4	16	2	12	19½	8.70	12.60	12.30	16.80		
2	18	1¼	12	12½	4.20	7.80	7.40	9.90		
2½	18	1¼	14	14½	4.50	8.10	7.65	10.20		
3	18	1¼	14	16½	5.10	8.82	8.25	10.95		
3½	18	1½	14	19¾	7.50	10.62	10.35	14.10		
4	18	2	14	21¾	9.60	13.86	13.35	17.85		
2	20	1¼	14	13½	4.80	8.60	7.80	10.30		
2½	20	1¼	16	15½	5.10	8.82	8.10	10.65		
3	20	1¼	16	19½	5.70	9.54	8.85	11.55		
3½	20	1½	16	22	8.10	11.70	11.40	15.15		
4	20	2	16	25½	10.20	15.12	14.40	18.90		

Price List of Set Length or Intermediate Pipe

Diameter of Pipe in Inches	Set Length Prices for Ontario and East		Set Length Prices for Western Provinces	
	3 ft. for Steel Pipe Stnd'd.	4½ ft. for Cast Iron Stnd'd.	6 ft. for Steel Pipe Stnd'd.	8 ft. for Cast Iron Stnd'd.
Black Set Length List				
1¼	\$1.00	\$1.20	\$1.50	\$1.80
1½	1.10	1.30	1.70	2.00
2	1.40	1.60	2.00	2.40
2½	1.60	2.00	2.70	3.40
3	2.00	2.60	3.40	4.40
Galvanized Set Length List				
1¼	\$1.40	\$1.60	\$2.10	\$2.50
1½	1.50	1.80	2.30	2.70
2	1.70	2.10	2.70	3.30
2½	2.20	2.90	3.70	4.70
3	2.70	3.60	4.60	5.80

Pump Rod

Black.....	8c. per lb.	Galvanized.....	10c. per lb.
⅜ in.—265 feet.....	weigh 100 lbs.		
⅞ in.—195 feet.....	weigh 100 lbs.		
½ in.—150 feet.....	weigh 100 lbs.		

Black and Galvanized Pipe

Being very large buyers of pipe we are able to purchase at extremely advantageous rates. We use pipe for our cow stalls, our horse stalls, our water bowls and our pumps, so that by buying pipe from us you get the benefit of our ability to buy cheaply.

Price per hundred feet.

Diameter of Pipe	Black	Galvanized
1 inch.....	\$ 9.30	\$13.20
1¼ "	12.40	17.50
1½ "	14.80	21.20
2 "	19.80	28.00
2½ "	31.50	46.00
3 "	44.00	60.00

Wood Pump Rod and Couplers

Our wood pump rod is made from the very highest quality of yellow pine, made square with corners trimmed off. The couplers are made of malleable iron and galvanized.

Sizes and Prices

	With Couplers	Without Couplers
1½ inch.....	\$ 5.00	\$3.00
1¾ "	10.00	6.00

The above prices are for one hundred feet.

BT Pump Leathers

The superior strength and durability of B-T Pump Leathers are due to three things:

1. The process by which the leather is tanned.
2. The character of the hides from which it is made.
3. The skill employed in the manufacture of the leathers.

The hides used in B-T Pump Leathers are tanned to comply with the rigid requirements of our own special specification. The leathers are then manufactured in the largest and best equipped plant for manufacturing Pump Leathers in Canada. Special machinery is used for each process, and all skirts and roundings of the hides are rejected, and only the best portions of the hides are used. These portions are then skived, so that the most suitable parts of the leather are used. Only 33 per cent. of the hide is made into B-T Pump Leathers. After the leathers are formed, they are treated with a preservative, which has much to do with their wonderful strength and durability.

The strength of the B-T Leathers is so much in excess of that of other makes that it requires no delicate instrument to make comparative tests. To slit a piece of B-T Leather and one of any other make and test with the hand, is a comparatively simple matter, and the difference in favor of B-T will be so apparent as to require no further proof. It must be evident that the difference must be very decided to be so noticeable under such a test. However, there is a still better test that Pump Leathers can be subjected to in order to determine their quality. A Pump Leather, to give satisfactory service, must remain firm and keep its shape after it is exposed to water. Put a B-T Pump Leather into a bucket of water with one of any other make, and leave them there for several hours. You will find that the B-T Leather will remain quite as firm as when first put in the water. Any leather that does not do this will give poor service.

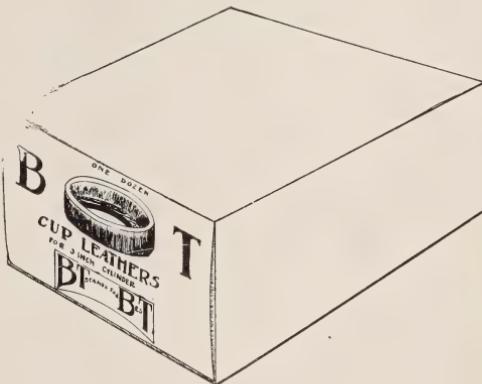


Fig 1346

B-T Pump Leathers are used by many manufacturers of Pumps and by dealers everywhere in Canada who know the value of good Pump Leathers. They are made in any size, and a large stock is kept continually on hand so that immediate shipment can be made.

A very important point in regard to B-T Leathers is the fact that they will not deteriorate when kept in stock even for several years. This is owing to the special treatment which is given to the leathers during the process of manufacture.

B-T Leathers are neatly put up in square-cornered cartons, shown in Fig. 1346. These are much better than tubular boxes for shelf storage, as they will not roll around on the shelves, and can be packed one above the other.

At a glance your complete Leather inventory can be taken, because the kind, quantity and size are printed plainly on the front of each box. The list on the following page gives our latest revised prices. We make special prices for large quantities.

BT Pump Leathers



Fig. 1147

Plunger Leather not Crimped.



Fig. 1345

Gasket Leather.

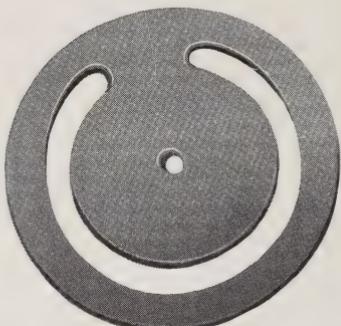


Fig. 1146

Lower Valve Leather.

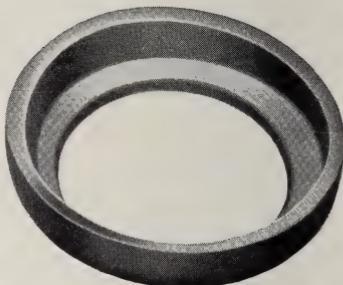


Fig. 1148

Crimped Plunger Leather.

SIZES AND PRICES.

Diameter in inches.....	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5 small hole	$5\frac{1}{2}$ large hole	6
Cup Leathers, Fig. 1148, per hundred.....	\$5.00	\$6.30	\$7.50	\$8.80	\$10.00	\$14.00	\$16.80	\$24.00	\$28.00	\$40.00	\$60.00	\$50.00	\$80.00
Lower Valve Leather,* Fig. 1146, per hundred	—	—	—	—	7.00	10.00	12.00	15.00	18.00	22.00	34.00	—	48.00
Plunger Leather, Fig. 1147, per hundred....	—	—	—	—	7.00	10.00	12.00	15.00	18.00	22.00	34.00	—	48.00

Prices on Gasket Leathers, Fig. 1345, will be given on application. In asking for prices kindly state size and number required.

* Valve Leathers are always designated by the size of cylinder in which they are used. The actual size of the leather is a little larger. For a 3 inch iron or brass lined cylinder the leather measures $3\frac{5}{8}$ inches in diameter. For a brass cylinder it is somewhat smaller—measuring $3\frac{1}{4}$ inches.

Tool Kits

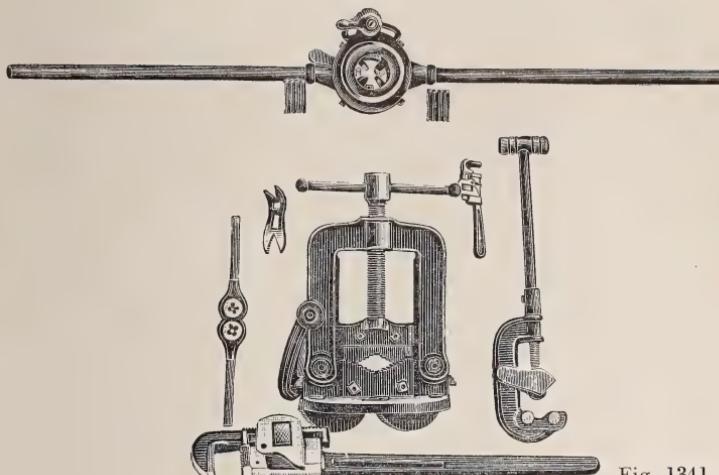


Fig. 1341

PRICE LIST OF FIG. 1341

1 only Oster Bull-Dog Die Stock, complete with 3 sets of dies as follows:— $\frac{1}{2}$ " to $\frac{3}{4}$ ", 1" to $1\frac{1}{4}$ ", $1\frac{1}{2}$ " and 2"	\$ 32.50
1 only Pipe Vice—Holds pipe $\frac{1}{2}$ " to $4\frac{1}{2}$ "	7.50
1 only Trimo Pipe Wrench, 24"—Holds pipe $\frac{1}{8}$ " to $2\frac{1}{2}$ "	4.50
1 only pipe cutter, cuts pipe 1" to 2"	3.50
1 only pump rod stock with dies as follows:— $\frac{3}{8}$ ", 14 thread; $7/16$ ", 12 thread	4.00
1 only Trimo Pipe Wrench, 8" for tightening rod, also holds pipe up to $\frac{3}{4}$ "	1.50
1 only Bull Terrier Wrench.....	.40
	\$53.90

We strongly advise the use of our best tools as shown above. The extra cost is easily met by the saving in delay and trouble. Good tools last longer do better work and save time and temper. To encourage our dealers to use the best tools, we will quote a price of \$50.00 for the complete set, shown above instead of \$53.90. Tools ordered separately will of course be charged as given above.

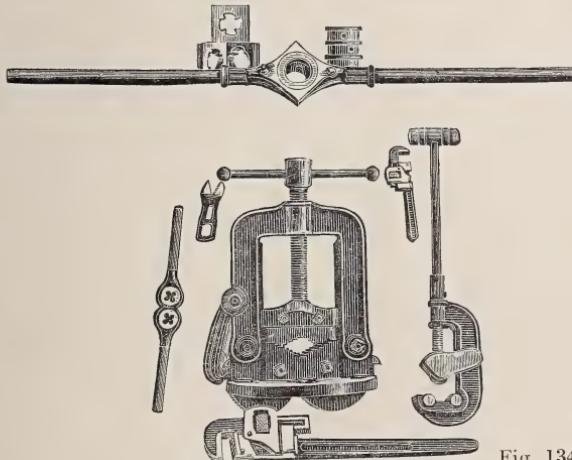


Fig. 1342

PRICE LIST OF FIG. 1342

1 only Malleable Pipe Stock, with Solid Dies as follows:—1", $1\frac{1}{4}$ " and $1\frac{1}{2}$ ".....	\$ 8.00
1 only Pipe Vice, holds pipe $\frac{1}{4}$ " to $4\frac{1}{2}$ ".....	7.50
1 only Trimo Pipe Wrench, 18", holds pipe $\frac{1}{8}$ " to 2"	3.00
1 only Pipe Cutter, cuts pipe from 1" to 2"	3.50
1 only Pump Rod Stock, with Dies as follows:— $\frac{3}{8}$ ", 14 thread and $7/16$ ", 12 thread.....	4.00
1 only Primo Pipe Wrench, 8", for tightening rod, also holds pipe up to $\frac{3}{4}$ ".....	1.50
1 only Bull Dog Wrench.....	.20

Malleable Pipe Fittings



FIG 1129



FIG 1130



FIG 1128



FIG 1126



FIG 1127



FIG 1134



FIG 1133



FIG 1132



FIG 1135



FIG 1139



FIG 1131



FIG 1137



FIG 1136



FIG 1138



FIG 1137

PRICE LIST

Inside Diameter of Tube, Inches.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	
Fig. 1126—Common Elbows....	Black.....	\$0.04	\$0.06	\$0.10	\$0.12	\$0.18	\$0.20	\$0.24	\$0.36	\$0.70	\$1.40
	Galvanized.....	.05	.08	.14	.16	.24	.28	.36	.60	1.00	2.20
Fig. 1127—Street Elbows	Black.....	.08	.10	.12	.16	.18	.26	.32	.40	.64	1.30
	Galvanized.....	.12	.14	.16	.22	.26	.36	.46	.60	1.00	2.00
Fig. 1128—Reducing Tees....	Black.....	.06	.08	.10	.16	.20	.24	.32	.44	.90	1.34
	Galvanized.....	.08	.10	.16	.24	.28	.40	.50	.76	1.66	2.30
Fig. 1129—Tees....	Black.....	.06	.08	.10	.16	.18	.26	.30	.40	.80	1.20
	Galvanized.....	.08	.10	.16	.24	.26	.42	.46	.70	1.50	2.10
Fig. 1130—Crosses....	Black.....	.06	.08	.10	.16	.30	.36	.40	.50	.62	1.20
	Galvanized.....	.08	.10	.12	.22	.44	.50	.60	.80	1.00	2.00
Fig. 1131—Bushings....	Black.....	.04	.04	.04	.05	.06	.07	.09	.14	.21	....
	Galvanized.....	.08	.08	.08	.10	.12	.14	.18	.28	.42	....
Fig. 1132—Locknuts....	Black.....	.03	.03	.04	.05	.06	.08	.10	.12	.16	....
	Galvanized.....	.04	.04	.05	.08	.10	.12	.14	.16	.20	....
Fig. 1133—Caps....	Black.....	.03	.04	.06	.08	.12	.18	.22	.28	.40	.60
	Galvanized.....	.04	.05	.08	.10	.16	.22	.28	.36	.60	.90
Fig. 1134—Plugs....	Black.....	.02	.02	.02	.03	.04	.05	.07	.10	.18	.25
	Galvanized.....	.04	.04	.04	.06	.08	.10	.14	.20	.36	.50
Fig. 1135—Reducing Couplings..	Black.....	.04	.04	.06	.08	.12	.16	.20	.24	.36	.50
	Galvanized.....	.06	.06	.08	.12	.16	.20	.30	.36	.56	.90
Fig. 1136—Unions....	Black.....	.18	.20	.22	.27	.33	.46	.58	.75	1.65	2.25
	Galvanized.....	.27	.30	.33	.40	.50	.70	.90	1.15	2.50	3.50
Fig. 1137—Long Nipples	Black.....	.06	.06	.06	.08	.10	.12	.14	.16	.30	.50
	Galvanized.....	.08	.08	.08	.10	.14	.18	.22	.30	.46	.80
Fig. 1138—Wrought Iron Couplings..	Black.....	.05	.06	.07	.10	.13	.17	.21	.28	....	....
	Galvanized.....	.06	.08	.10	.13	.18	.25	.32	.40	....	....
Fig. 1139—Short or Close Nipples	Black.....	.04	.04	.04	.06	.08	.10	.12	.14	.22	.30
	Galvanized.....	.06	.06	.06	.06	.10	.14	.16	.20	.32	.46
Fig. 1137—Reducing Elbows....	Black.....	.04	.06	.10	.12	.18	.20	.24	.36	.70	1.40
	Galvanized.....	.05	.08	.24	.16	.24	.28	.36	.60	1.00	2.20



Fig. 1347



Fig. 1347 3/4



Fig. 1349

BRASS PIPE FITTINGS

Diameter of Pipe in inches.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Brass Compression Bib, Fig. 1347.....	\$0.80	\$1.00	\$1.20	\$1.75	\$3.20	\$6.00	\$8.00	\$16.00
Brass Globe Valve, Fig. 1348.....	.60	.70	1.00	1.25	1.60	2.40	2.80	4.00
Brass Stop Cock, Fig. 1349.....	.70	.80	1.25	1.60	2.00	3.20	4.00	6.40
Iron Stop Cock.....			1.00	1.20	1.60	2.00	2.50	3.00

Valves, Strainers



Fig. 1036

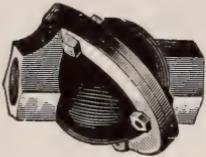


Fig. 1061

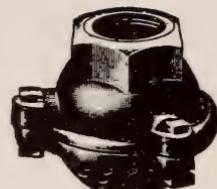


Fig. 1118



Fig. 1032



Fig. 1034
Not Threaded



Fig. 1033
Threaded



Fig. 1119
Threaded

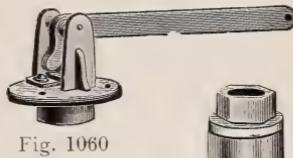


Fig. 1060



Fig. 1041

SIZES AND PRICES

Size of Pipe in Inches.....	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Fig. 1032—Foot Valve, with long strainer (black).....	\$1.40	\$1.60	\$2.00	\$2.60
Fig. 1032—Foot Valve, with long strainer (galvanized).....	1.80	2.05	2.50	3.20
Fig. 1118—Foot Valve, with bowl strainer (black).....	.50	.60	.75	1.00
Fig. 1118—Foot Valve, with bowl strainer (galvanized).....	.62	.75	.92	1.20
Fig. 1061—Horizontal Check Valve.....	1.00	1.10	1.40	1.75
Fig. 1036—Check Valve.....	1.00	1.10	1.40	1.75
Fig. 1041—Check Valve, Brass Body.....	2.00	2.20	2.80	3.50
Figs. 1033, 1034 and 1119—Strainers.....	.30	.40	.50	.60
Figs. 1033 and 1034—Strainers, covered with brass gauze.....	.60	.70	.80	.90
Fig. 1060—Tank Valve.....	1.00	1.00	....	....

Foot Valves should be used with all well pumps when the Cylinder is not submerged, to relieve the upper valves of the weight of the column of water.

The Check Valve, Fig. 36, is for the same purpose, but used at any point in the suction pipe. Horizontal Check Valves are for use in delivery pipes to prevent water from returning from tank, also in any horizontal pipes.

Drive Caps



Fig. 1140

Rod Couplings

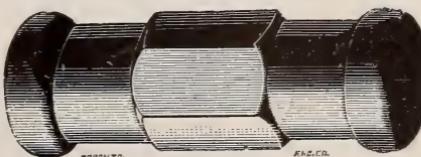


Fig. 1028

Size Inches	$1\frac{1}{4}$	$1\frac{1}{2}$	Malleable Rod Couplings $\frac{3}{8}$, $\frac{7}{16}$ and $\frac{1}{2}$ inch, per lb.....	\$0.48
Fig. 1140	\$0.42	\$0.54	Galvanized Malleable Iron Rod Couplings $\frac{3}{8}$, $\frac{7}{16}$ and $\frac{1}{2}$ inch, per lb .....	.60

Cast Fittings for Wooden Pumps

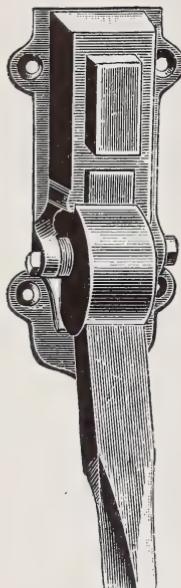


Fig. 1063
Bracket with Wheel

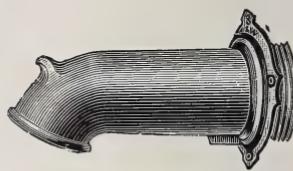


Fig. 1064
Spout with Shield

No. 1—Inside diam. of spout .. $1\frac{1}{4}$ in.
No. 2— , , , .. $1\frac{5}{8}$ in.
No. 3— , , , .. $1\frac{7}{8}$ in.



Fig. 1065
Handle Link Malleable

Sizes and Prices

	No. 1	No. 2	No. 3
Fig. 1063.....	....	\$0.80	\$1.00
Fig. 1064.....	\$0.60	.70	.80
Fig. 1065.....	.50	.60	.70

Revolving Water Conductor and Handle Ball



Fig. 1120

Fig. 1121 represents our Revolving Water Conductor, used to conduct water from pump to tank. It is furnished with a swivel, and water can be carried in any direction without disconnecting from the spout. Tapped for $1\frac{1}{4}$ or $1\frac{1}{2}$ inch pipe, if so ordered.

Price..... \$1.00



Fig. 1121

Fig. 1120—Handle Weight..... Price 80c.

Standard Drive Well Points

Made of galvanized iron pipe covered with fine brass wire gauze, and perforated brass jacket. They have the largest possible filtering space that can be given and still retain sufficient strength.

Please order by Trade Numbers and Figure.

SIZES AND PRICES

Figs. 1043 and 1043½

Trade No.	Diam. of Pipe, Inches	Length of Point Inches	Length of Jacket Inches	Price per Dozen		
				No. 60 Guage	No. 80 Guage	No. 90 Guage
86	1 1/4	20	14	*	\$19.00	*\$ 26.00
90	1 1/4	24	18	*	22.00	* 34.00
94	1 1/4	30	24	*	28.00	* 39.00
98	1 1/4	36	30		34.00	46.00
100	1 1/4	42	36		40.00	55.00
102	1 1/4	48	42		46.00	64.00
136	1 1/2	24	18	*	29.00	* 40.00
140	1 1/2	30	24		37.00	48.00
144	1 1/2	36	30	*	44.00	* 58.00
146	1 1/2	42	36		51.00	70.00
148	1 1/2	48	42		58.00	80.00
150	1 1/2	54	48		66.00	91.00
160	2	24	18	*	46.00	* 67.00
164	2	30	24	*	55.00	* 80.00
184	2 1/2	36	30		64.00	94.00
200	3	36	30		146.00	188.00
						206.00

No. 1043½

No. 1043

We will endeavor to keep in stock all numbers marked (*) ready for immediate shipment. All other numbers will be shipped as promptly as possible.

Prices for any size point not given above will be quoted on application.

Lengths given do not include the Malleable Iron Point.

When ordering always use figure and trade numbers and state guage required.

Better Pumps at Lower Prices

Shipment Guaranteed by First Train

LOWER
COST

that the more you build the cheaper you can build them. With different heads and different cylinders, we could turn out of our pump factory over 50,000 different styles of pumps. Every good pump man knows that such a variety is foolish—that there is a proper pump for each purpose. We have carefully chosen **four pumps** which practically cover the well pump field and are the best pumps made for their respective uses. To get the pump men of Canada to use these pumps we are offering a surprisingly low price on them. We know that by building thousands of exactly the same pump we will have just as much profit even at these low prices

But lower cost is not the only advantage from this system.

PROMPT
SHIPMENT

There is not a pump man in Canada but knows the delay and inconvenience caused by not getting prompt shipment on pumps. Have you ever had the trouble of writing, wiring or telephoning why your pump order has not arrived? Have you ever had your customer coming into your store and raising Cain because the pump he ordered weeks ago has not yet come to hand.

On no line is prompt shipment so necessary. We can't do without water. When a pump breaks, or when a farmer is out of water, something must be done and done quickly, and here is where the great advantage of this system comes in. Instead of having to **build the pump after you write us** and tell us what pump head, what style of handle, what cylinder, etc., you want, we are able to build these pumps in advance, and we have built thousands of them and have them now ready to ship. Further, we have given our pump factory orders that at no time must they have less than one hundred of any one of these styles ready to ship, or someone will lose his job.

What is the result? **We can guarantee shipment of your Order by first train after it is received.**

SPECIAL
SERVICE

By specializing on certain pumps, giving them every thought and attention, we are able to turn out better pumps than when we turned out such a large variety. The longer a man works on a job the more expert he becomes and the better he can do it. We are putting our best men on these special pumps and keeping them on this work continually.

We have picked out the proper size of cylinder to give the best service with each pump. These pumps are well balanced, and being put together in our factory you have the benefit of our special machinery which insures that every joint will be tight and perfect in every particular.

And we are able **to guarantee every pump to be in perfect condition and ready for the well when shipped.**

SPLENDID
FINISH

Special care is taken with the finish of these pumps. You know the help in selling well finished goods are. The main body of the pump is painted dark green and is finished in red and gold. They certainly look well and the paint used is the best money can buy. Further, these pumps being put through in advance—not being rushed through after the order is received and shipped out half dry—the paint has time to harden and the pumps arrive in proper condition.

ORDER
NOW

Does this proposition seem reasonable?

Do Lower Prices, Better Pumps, Better Finish and Guaranteed Shipment appeal to you? If so, order now and get in on the ground floor with these special pumps. The finish and the price will sell them.

The prompt delivery and pleased customers from proper working pumps will help you build up your business.

Send in your order now for a trial shipment of these "Ready-to-Ship Pumps."

BT Set-Length Pumps



Fig. 600.—This is a light, strong pump for use in shallow wells and outdoor cisterns. It has steel pump standard and adjustable base. This pump is for hand use only. It is a Lift Pump and cannot be fitted for force. It has straight spout and iron handle.

It is fitted with our Challenge top which has 6 in. stroke.

It is fitted with ~~3~~³ foot galvanized set-length and a **3 in. by 10 in. polished iron cylinder**—outside cap, and is Anti-freezing.

Weight, 64 lbs. Capacity, 365 gals. per hour. Tapped for $1\frac{1}{4}$ in. pipe.

Price, complete with set length and cylinder as above
~~\$9.40~~. Code, Jack.
~~7.50~~

Fig. 600

BT Set-Length Pumps

Fig. 700.—This is a strong, very easy-working pump. The standard is cast-iron and is cast in one solid piece. The head of the pump is strong enough for any well.

As illustrated, this pump is for hand use, but can be adapted for windmill or other power by the addition of a windmill bar which is screwed into the top. This bar is sent with the pump. A brace is also sent to strengthen the standard. The handle is wood.

This pump can be fitted either for lift or force.

This pump is fitted with the Easy-working Superior Top. There is less wear and friction on the pump rod with this top than any other as the lift is perpendicular and no power is wasted on side pressure.

This pump has 7 inch stroke. It is Anti-freezing.

It is fitted with ~~the~~ foot galvanized set-length and **3 $\frac{1}{2}$ in. x 10 in. brass lined cylinder**—outside cap.

Weight, 73 lbs. Capacity, 584 gals. per hour. Tapped for 1 $\frac{1}{2}$ in. pipe.

Price, complete with set-length and cylinder as above
~~\$15.00~~
\$12.00 Code, George.

Extra for force attachments..... \$1.20



Fig. 700

BT Set-

Length Pumps

DOES PROMPT
SHIPMENT
APPEAL TO YOU

Any Alteration in the Specifi-
cations on these Pumps will
compel us to invoice the Pump
at ordinary Catalogue Price



Fig. 800.—This is a heavy Well pump of the very highest grade. It is the very best pump that can be produced—will handle a tremendous volume of water and do it easily.

It has heavy cast iron standard, with a moveable siphon spout.

It is fitted with the Superior top, which is unrivalled for easy working, as it always moves in an absolutely vertical position. The wood handle is far nicer in cold weather than iron. As will be noted by the illustration this pump can be used either for hand or power.

It can be fitted either for force or lift. This pump has adjustable strokes of 7 in. and 9 in. It is fitted with 4 in. \times 12 in. Brass Body Cylinder outside cap. With a 9 in. stroke and 4 in. cylinder this pump will certainly raise some water. The set length is galvanized.

This pump is Anti-freezing.

Weight 96 lbs. Capacity 960 gals. per hour. Tapped for 2 in. pipe.

Price: Complete with set length and cylinder as above \$21.30
Code, James. 17.00

Extra for Force Attachments .. 1.20

Fig. 800

BT Set-Length Pumps

For Other Styles of
PUMPS and CYLINDERS
See Our Pump Catalogue

OUR PUMPS
Look Well, Sell Well, Wear
Well and Work Well

Fig. 900—This is a Force Pump designed to either force water through an underground discharge or bring it through a spout in the ordinary way. By simply throwing over the cam lever above the spout, the direction of the water may be changed in a moment.

This Pump is built almost entirely of steel and wrought iron.

It can be used either by hand, or for windmill or other power.

The Base is adjustable. As will be noted from the engraving it is a Double Acting Pump.

As the stuffing box is in the cylinder below the frost line, this pump is absolutely anti-freezing.

It is fitted with **3 in. x 16 in. brass lined cylinder**—inside cap. It has 7 inch and 10 inch stroke. Weight 94 lbs.

Capacity, 608 gals. per hour. Tapped for $1\frac{1}{4}$ in. pipe. Underground discharge tapped for $1\frac{1}{4}$ in. and 1 in. pipe.

Price, complete with cylinder as above
\$25.00. Code, Joe.
20.00

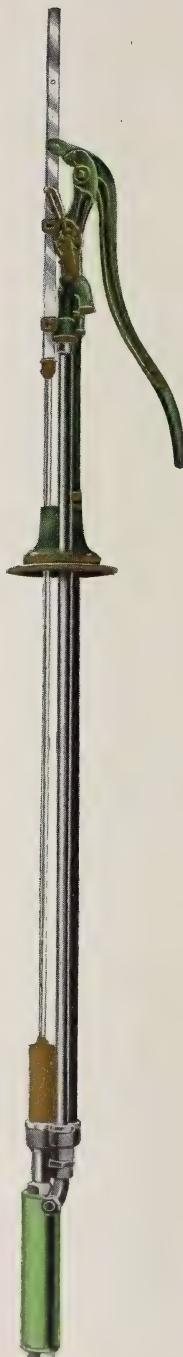


Fig. 900

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The BT Hay and Grain Unloaders, Forks, Slings, Pulleys, Patent Steel Tracks, Etc.

It takes no argument to-day to sell a farmer a hay carrier outfit. No up-to-date farmer would dream of doing without one. Throughout the Dominion there is a steady demand for Hay Tools, and the only question in the mind of the farmer is—which make to purchase. In many sections of the country there are old outfits that are beginning to play out. These were only adaptable to handling a fork and hay. There is now a splendid chance of selling Sling Outfits to handle both hay and bound grain. A BT Sling Outfit will remove any load in from two to three lifts, and deposit it in the mow in much better shape than if handled by a fork.

Many farmers will postpone the purchase of a Hay Carrier Outfit until the hay is already cut and ready to draw in. Unless the dealer is in a position to fill the orders promptly, he will lose the trade, and so it is advisable to carry a complete stock on hand.

Hay carriers are not all alike. Remember that the many features of BT Cars are not found in any other make, as we have them carefully covered by patents. A hay carrier outfit has to do very heavy work, at a time when a breakdown means a very heavy loss. When one considers that a hay carrier, weighing about 30 lbs., is expected to carry any weight up to one ton, some idea may be obtained of the strain on the machine. BT Hay Carriers are built to stand the hardest usage, and have the smallest possible number of parts to get out of order.

It is most essential that the line of Hay Carrier Goods handled by any dealer should be adaptable to every style of barn, and every description of crop that it may be desired to handle. In the BT line is included some 23 makes of Hay Carriers for every description of work, and a broad selection of Slings, Forks, Pulleys, and all fittings, unequalled anywhere else in the world.

In our recent purchase of the business of Messrs. Wortman & Ward, of London, we added the famous Hay Carrier Goods manufactured by this company to a line already broader and better than any other in Canada. Previous to this, we added the Hay Carrier business of Messrs. Tolton Bros., of Guelph; the Oshawa Hay Tool line, manufactured by James Provan; and the Whitman and Barnes line, manufactured in St. Catharines. In each case we purchased the Hay Tool business complete, including all patterns, patent rights, etc., and can supply these lines complete with every latest improvement.

We carry a large stock at all times, and as our Factory at Fergus is centrally located in Ontario, on both the Grand Trunk and Canadian Pacific railroads, our customers can depend on prompt shipment. This season 95 per cent. of our mail orders went forward on the first train after the order was received.

The Maple Leaf Single Rail Unloader

A Combination Reversible and Swivel Carrier for our New Heavy Single-Rail Steel Track.

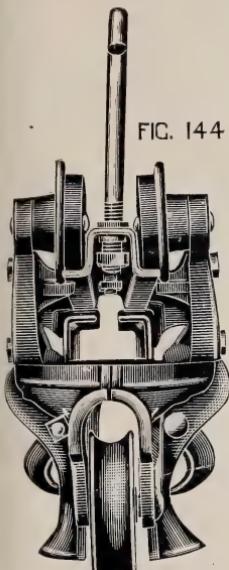


FIG. 144

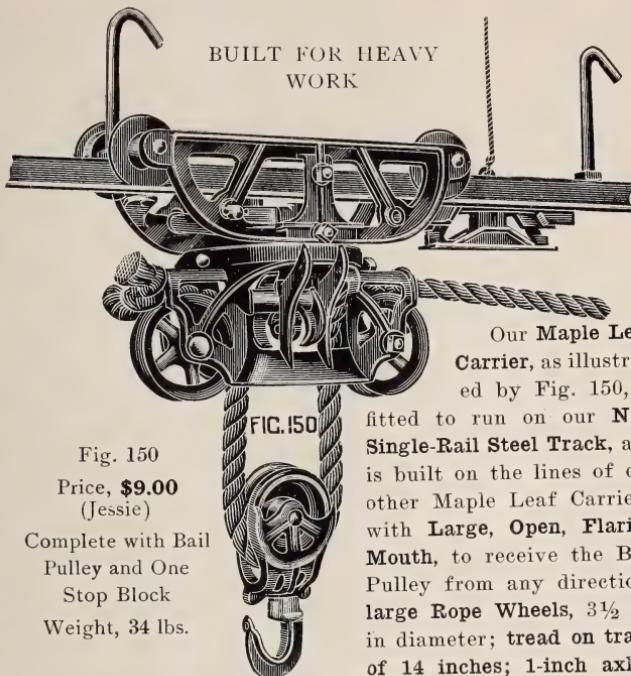


Fig. 150

Price, \$9.00
(Jessie)

Complete with Bail
Pulley and One
Stop Block
Weight, 34 lbs.

No Springs in this
Carrier

Finished in Aluminum

and chilled Wheel bearings; hinged lock in one piece; swinging Bail Pulley; raise and lower stop block.

Fig. 144 gives an end view of the **Maple Leaf Single-rail Carrier** and its **Track**. Note the wide bearing of the **Travellers** on the track—almost twice as great as in other carriers. Note also how strongly braced the Carrier is to make spreading impossible. It is designed so compactly that it carries its load higher than any other make of carrier. To ensure easy running it has Travellers of exceptionally large diameter.

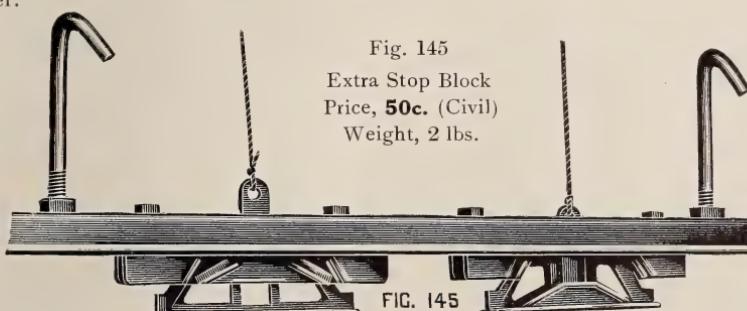


Fig. 145

Extra Stop Block
Price, 50c. (Civil)
Weight, 2 lbs.

Fig. 145 gives two views of the combined **Maple Leaf Stop Block** and gate for our **Single Rail Track**. In the stop to the right the inclines are down so that the carrier must register and lock. In the one to the left the inclines are raised so that the loaded carrier will pass.

The Bail Pulley is described, Fig. 98, on page 75.

The BT Single-Rail Steel Track

On this page is illustrated the "BT" Single-Rail Steel Track, which is stronger and heavier per foot than any other steel hay carrier track built. We guarantee it to safely carry a ton with three-foot spans. No part of an outfit is more important than the track.

FIG. 65



List 24c per foot. Complete with joints. (Castor) Weight 2 $\frac{1}{3}$ lbs. per foot. Fig. 65 shows the top side of the "BT" Single-Rail Steel Track. Note that the hangers can be attached where wanted.



FIG. 66

Fig. 66 shows the bottom side. You can see that the lower hanger nut cannot turn off, since it is securely held in position in the groove of the track.

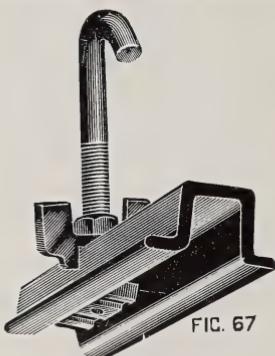
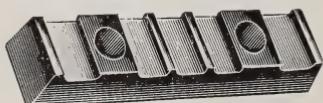


FIG. 67

Hanger Hook
List 15c each. (Cushion)



Cross Section, Full Size
BEATTY, SINGLE RAIL, STEEL TRACK

Fig. 68.

Figs. 67 and 68 show the shape of the channel. It has a width of 2 $\frac{1}{2}$ inches and a depth of 1 $\frac{1}{4}$ inches.

Note the wide flange for the Carrier Travellers. Its width is almost twice as great as that of other makes of tracks.

Fig. 67 shows the Hanger Hook used with the "BT" Single-Rail Steel Track. It is easily attached, and the lower nut is locked so that it can't turn off. Any style of rafter bracket may be used with it.



Extra Joint Clips
List 20c each. (Cook)

Fig. 69 shows the heavy malleable Joint Clip used with our Heavy Single-Rail Steel Track. The bolts which secure it to the track pass through the end holes of each track bar, and leave no possibility of sag or separation at a joint.

We own, and so control, the output of the rolls for this track.

The Maple Leaf Double Angle Unloader

Combination Reversible and Swivel Carrier for Double Angle Steel Track

Fig. 100-(Mary) List \$9.00 Complete with Bail Pulley and One Stop Block.

Weight 33 lbs.

Our **Maple Leaf Steel Track Carrier**, illustrated in Fig. 100, runs on our Famous **Double Angle Steel Track**, and is constructed along the same lines as our other **Maple Leaf Carriers**. The **Stop Block** can be **opened from the floor** in order to allow the carrier to pass it with a load.

The **Rope Wheels** are $3\frac{1}{2}$ inches in diameter—

one inch larger than in other Carriers. The **Travellers** are large, and the Carrier has a **tread** on the track of **14 inches**, some four inches more than have other makes of Fork Carriers.

Fig. 100 shows how the **Bail Pulley** can swing freely on its axle after registering in the ear, so that a load can be drawn over high beams or into a mow nearly full without tipping the Carrier or injuring the Bail Pulley. Note that the **Grappling Hooks engage with the Rim of the Bail Pulley Sheave**, and not with the Bail Pulley Frame, so that there is no wear on the Grappling Hooks when the bundle swings. The Carrier is provided with two Rope Wheels, which means that it will have a much **longer life**, since when the bearings of one Rope Sheave are worn the other can be used. All the Axles in the Carrier are 1 inch in diameter, and the bearings of the Wheels and Travellers are **chilled as hard as flint**, so that they will last.

The Carrier is solidly constructed of **malleable iron**, and weighs 33 pounds. It is well finished in every particular, and is thoroughly adjusted and tested before leaving the factory.

Fig. 97 shows an end view of our **Maple Leaf Carrier**, showing the **substantial lock A**, and the **deep grooved track wheels** that run on our double steel track. The lock is hinged in the sides of the truck frame, and so friction is done away with, and the carrier leaves the stop without a jar.

Fig. 98 illustrates the **Bail Pulley** for our **Maple Leaf Carrier**. The **Bail Pulley hook** has a **hole cored through it** so that a cotter pin may be used to secure the fork or sling chain. The grapping hooks in the carrier engage with the **rim of the sheave**, thus the load swings freely on the **Bail pulley axle**, and does not wear off the points of the grapping hooks. The sides of the **Bail Pulley fit closely to the sheave** and expose no corners or edges to injure the rope. One **Bail Pulley** and one **stop block** are included with each **Carrier**.

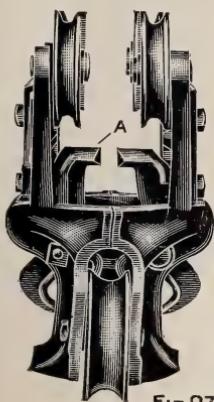
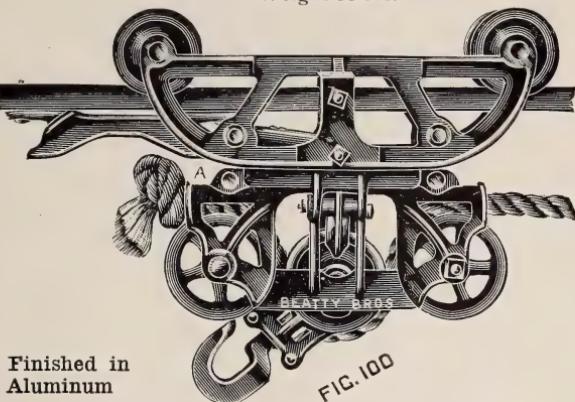


FIG 97



FIG. 98 (Caspar)
List \$1.50
Weight 4 lbs.

The BT Double Angle Steel Track

The "BT" Double Angle Steel Hay Carrier Track is exceedingly strong, and after years of use has proved itself reliable. It is much heavier than most hay carrier tracks, weighing, as it does, $2\frac{1}{2}$ pounds to the foot. It is made of the best grade of stiff seventy-carbon steel. Its deepest and strongest parts lie vertically under the load, while in other makes the wheels run on a thin flange extending out from a central web.



Fig. 34

List 22 Cents per foot (Copper). Complete with joints. Weight $2\frac{1}{2}$ lbs. per ft.

Fig. 34 shows one length of the Double Angle Steel Track ready to ship. The two Angle Bars are riveted together in the factory ready to erect. The Joint Clips are bolted securely to the end of the track, so that there is no possibility of losing or forgetting them. When two lengths are once bolted together the joint cannot be pulled apart.

An end view of the "BT" Double Angle Steel Track is shown in Fig. 33. Many makes of steel track outfits give serious trouble, since under heavy loads the angle bars spring together, or the carrier frame spreads, either of which will allow the car to come off the track. In the case of our Double Angle Steel Track grooved track wheels run on the vertical flanges shown in Fig. 33. A glance will convince you that it is impossible for this track to spring together, or for the carrier wheels to spread and slip off the track under any load, or even as a result of worn bearings.

We supply this tracking in various lengths up to 18 feet.



Joint Clips

FIG. 32



Extra Joint Clips. List, 40 Cents (Crust)



Fig. 96 shows our Double Angle Steel Track Hanger Hook. A malleable iron clip fits underneath the bars, and a malleable washer above, while a jam nut is tightened down to hold them rigidly. The lower nut cannot turn off, since it is locked in the Clip when the top nut is turned down. Hangers can be attached anywhere along the track, and any style of rafter bracket may be used. We are sole manufacturers of this track, and have special patents on it. It is easily erected, and the only tools necessary are a hammer and a wrench. When the joint and hanger bolts are once tightened the track can never work loose.

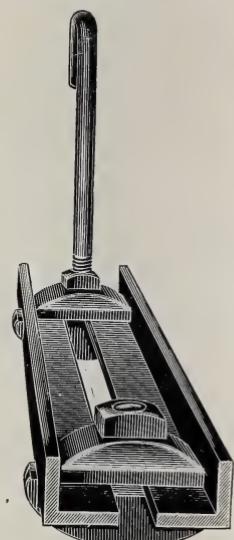


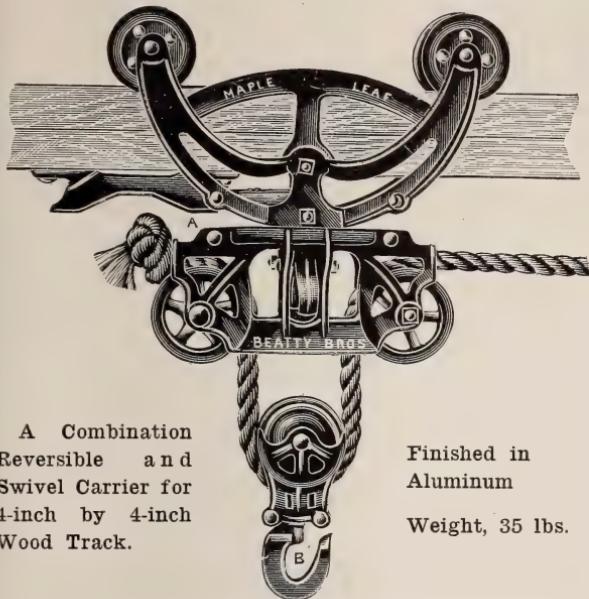
Fig. 33

Fig. 32 shows the Joint Clips used on our Double Angle Steel Track. They are bolted on securely in the factory, and $\frac{1}{2}$ -inch bolts are used to make the connection. On one end of each section of the track is riveted the lower clip, and on the other end the upper clip. They are always there when wanted.



Fig. 96
List 15 Cts.
(Crush)

The Maple Leaf Wood Track Unloader



A Combination
Reversible and
Swivel Carrier for
4-inch by 4-inch
Wood Track.

Finished in
Aluminum
Weight, 35 lbs.

Fig. 101. List \$9.00, (Ethel). Complete with Bail Pulley
and One Stop Block.

The **Track Wheels** are large, and have a wide bearing on the track. The **Rope Wheels** are $3\frac{1}{2}$ inches in diameter—an inch larger than in any other carrier.

The **Locking Mechanism** is free from springs, positive in action, and composed of only three parts, viz., one pair of **Grappling Hooks** to engage with the Fork Pulley, and a **Circular Lock**, which is hinged in the main frame of the Carrier, and so works without friction. No other Carrier built can engage with or leave the Stop Block as easily as the Maple Leaf.

While it has a **wide tread**, **liberal bearings** and **large wheels**, it is also exceedingly **compact**, and carries its load several inches higher than any other Carrier built.

The Maple Leaf Bail Pulley

Fig. 98. List \$1.50. (Caspar). Weight 4 lbs.

FIG. 98
The diagram shows a side profile of the Bail Pulley. It features a hook at the top with a central hole for cotter pins. The pulley itself is a sheave mounted on a shaft. The text describes how the pulley is designed to fit closely to the sheave and expose no corners or edges to injure the rope. It includes a note that one Bail Pulley and one stop are included with each Carrier.
Fig. 98 illustrates the Bail Pulley for our Maple Leaf Carrier. The Bail Pulley hook has a **hole cored through it** so that a cotter pin may be used to secure the fork or sling chain. The grappling hooks in the carrier engage with the rim of the sheave, thus the load swings freely on the **Bail Pulley axle**, and does not wear off the points of the grappling hooks. The sides of the Bail Pulley **fit closely to the sheave** and expose no corners or edges to injure the rope. One Bail Pulley and one stop are included with each Carrier.

Fig. 99 shows the **Wide, Flaring, Open Mouth** of our Carrier, which will receive the Bail Pulley from any direction. No matter how twisted the rope is, the Carrier must register accurately.

The **Maple Leaf Car** illustrated by Fig. 101 is our latest production in fork carrier construction. It embodies all the points of advantage found in other fork carriers, together with some unique features on which we have secured letters patent.

This **Carrier** is both **Reversible** and **Swivel** and may be reversed or swivelled at any point on the track, as it can be easily drawn through the stop blocks in any position. It is strongly built of malleable iron, has a **14-inch tread** on the track, and weighs 35 pounds.

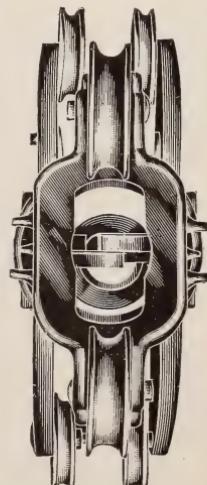


Fig. 99

The Maple Leaf Cable Unloader

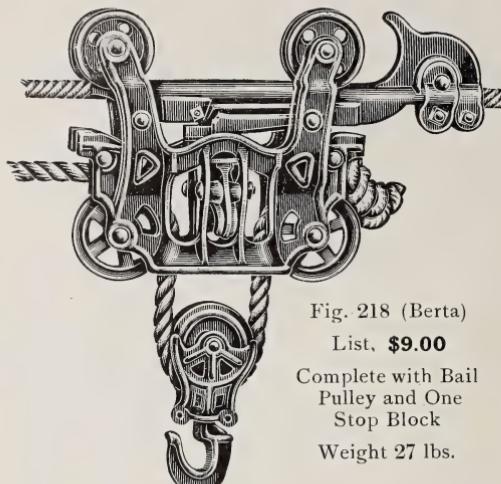


Fig. 218

Fig. 218 (Berta)

List, \$9.00

Complete with Bail Pulley and One Stop Block

Weight 27 lbs.

Our Maple Leaf Cable Car illustrated in Fig. 218 is built on the same lines and the same style of lock as our other Maple Leaf Cars. It has a large open flaring mouth so that it will receive the bail pulley from any direction. The rope wheels are large, $3\frac{1}{2}$ in. in diameter, so that the draft is light. It uses the same swinging bail pulley as our other Maple Leaf Carriers. The lock that secures the dogs is a one-piece hinge casting. The axles on all the wheels are inch and all wheels have chilled bearings. It is a reversible carrier and for heavy stacking work cannot be excelled.

FIG. 228

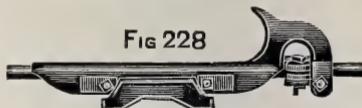


Fig. 228 (Cargo)

Extra Stop Blocks

List, \$1.50

Fig. 228 shows the Maple Leaf Cable Stop Block. It is secured to the cable by a clamp entirely separate from it which allows it to remain in a vertical position no matter how the cable turns.

Fig. 86 gives a very good illustration of how to build a Stacking Outfit. The following material is required for a 40-foot stack:—

FIG. 86



One Maple Leaf Cable Unloader.
One Fork.

150 feet of $\frac{5}{8}$ -inch galvanized Cable.
Two single Cable Clamps, Fig. 87.
Two double Cable Clamps, Fig. 88.
Two pulleys.



Fig. 87 (Cold)
List, 40c.

Fig. 87 shows Single Cable Clamps placed inside the poles on cable to keep the poles from coming together.

Galvanized Cable, $\frac{5}{8}$ in. (Cad). List, per foot, 16c.

130 feet $\frac{3}{4}$ -inch manilla rope; 60 feet $\frac{3}{8}$ -inch trip rope.

Two bolts $\frac{3}{4}$ -inch for securing poles together.

Four poles 4-inch by 4-inch and 30 feet long.



Fig. 88 (Can) List, 50c.

Fig. 88 shows our Double Cable Clamps, which secure a loop in the cable to attach the ends.

Pacific Single Rail Steel Track Carrier

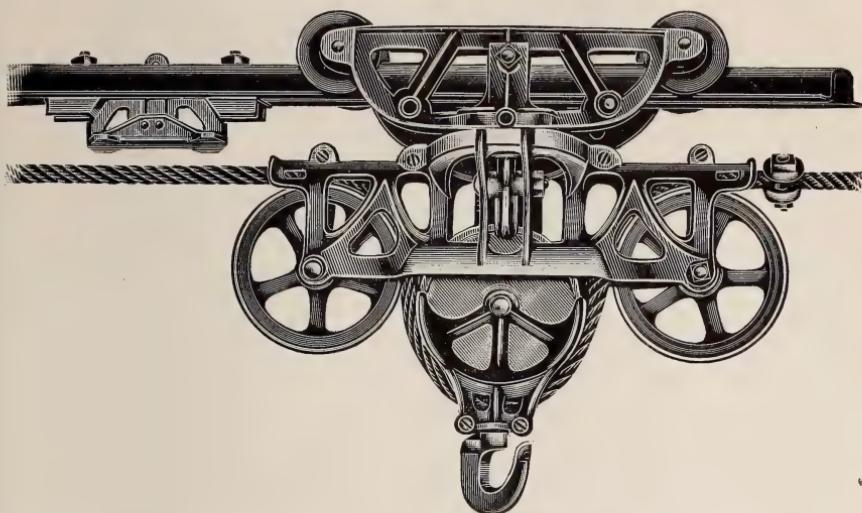


Fig. 461. Pacific Single Rail Steel Track Carrier. Complete with 7 in. Steel Cable or Manilla Rope Sheaves, Bail Pulley and one Stop Block. Code, Aclaim. Weight . List \$12.00.

Extra Stop Block for above. Code, Civil. List 50c.

Fig. 461 represents the "BT" Hay Unloader, built for using either Steel Cable or Manilla or Sisal rope.

In many parts of the country, farmers are now using a flexible cable instead of a fibre rope. This is especially popular in the West and on the Pacific Coast, where Sisal and Manilla ropes quickly rot out. The recent high price of rope has also had a tendency to increase the sale of cable. We specially recommend cable rope where used for outdoor work. Such, for instance, as End Lift Barns, where the rope is largely left exposed to the weather.

DESCRIPTION. The upper part of the car is exactly the same as that on the "Maple Leaf Cars." The same stop block is used with the "Pacific" car as with the Maple Leaf Car for the same style of track.

When a cable is used, a much larger rope wheel is necessary to prevent undue wear of the cable. The rope wheels on the Pacific cars are 7 inches in diameter and have a groove the right shape to handle a small cable without any danger of injury. There is no danger of the cable getting between the wheel and the frame.

The lock on these cars is exactly the same as that on the Maple Leaf Cars, and they are fitted to run on the same styles of track.

For draft the "Pacific" Cars handle a 3/8-inch wire cable.

Special 3/8-inch draft cable. Code, Cardlo. List, per foot, 10c.

"Pacific" Car for Double Angle Steel Track

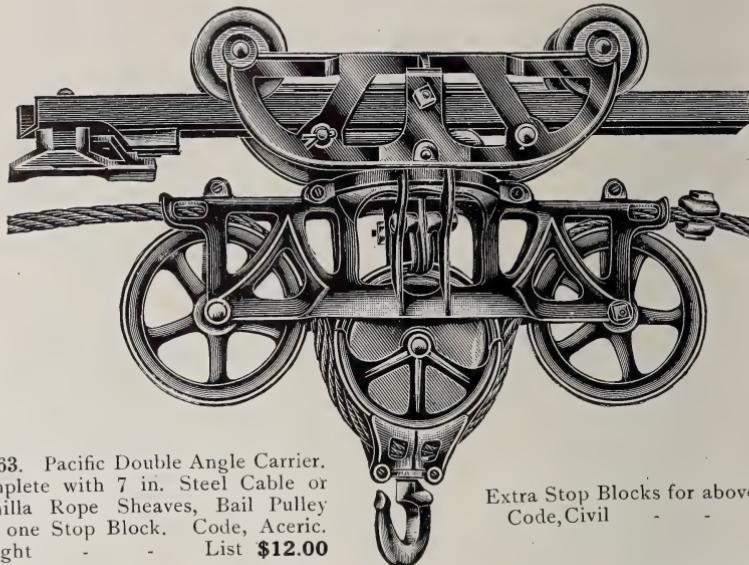


Fig. 463. Pacific Double Angle Carrier.
Complete with 7 in. Steel Cable or
Manilla Rope Sheaves, Bail Pulley
and one Stop Block. Code, Aceric.
Weight - - - List \$12.00

Extra Stop Blocks for above.
Code, Civil - - -

50c

All the "Pacific" Cars are fitted with pulleys to handle either Manilla rope or cable as desired. Whether used for cable or Manilla rope these cars are fitted with the large 7-inch rope wheels, which are easier on the rope and decrease the draft. With cable cars a larger draft pulley should be used. We recommend the large 8-inch pulley, Fig. 385, on page 108.

"Pacific" Car for Wood Track

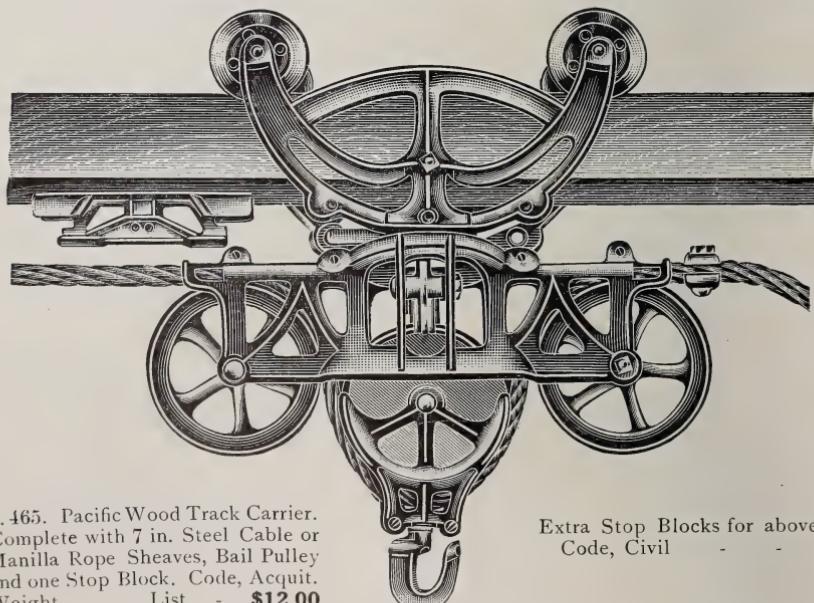


Fig. 465. Pacific Wood Track Carrier.
Complete with 7 in. Steel Cable or
Manilla Rope Sheaves, Bail Pulley
and one Stop Block. Code, Acquit.
Weight - - - List - \$12.00

Extra Stop Blocks for above.
Code, Civil - - -

50c

Fig. 465 illustrates the "Pacific" Car to run on wood track, and Fig. 463 the same car to run on the "BT" Double Angle Steel Track.

The BT "W. & B." Steel Track Unloader



Fig. 98 (Caspar)
Extra Bail Pulley
List, \$1.50

Fig. 20 (Jean)
List, \$8.00

Complete with Bail Pulley
and One Stop Block
Weight 30 lbs.

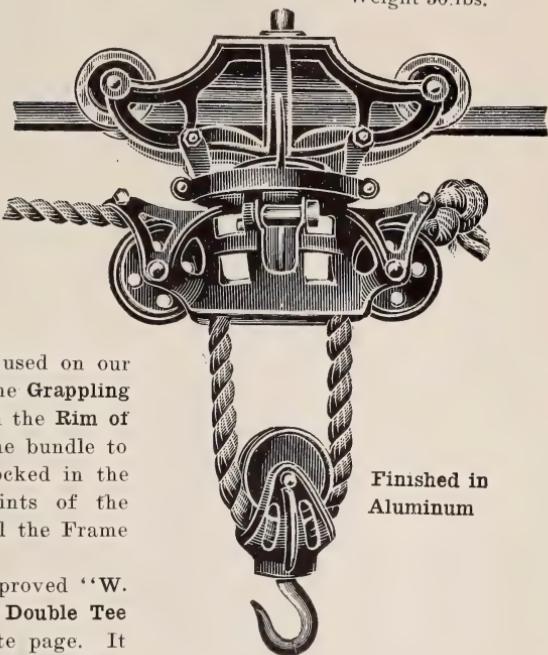


Fig. 98 shows the **Bail Pulley** used on our "W. & B." Steel Track Cars. The **Grappling Hooks** on the carrier engage with the **Rim of the Bail Sheave**, thus allowing the bundle to swing freely on its axle when locked in the Carrier without cutting the points of the Grappling Hooks. Note how well the Frame Sides protect the Rope.

Fig. 20 illustrates our latest improved "W. & B." Hay Carrier, designed for **Double Tee Steel Track**, described on opposite page. It is modern in every respect, and has many excellent features, one of which is a **Wide, Open Flaring Mouth**, which will receive the Fork Pulley when approaching in any direction. The Pulley Block cannot bind in the Car when the load is being dragged over a high beam or into a mow nearly filled.

It has a **Reliable, Positive Locking Mechanism** of three pieces only, so that the Bail Pulley is always held securely until released at the Stop Block.

The **Grappling Hooks** engage with the **Rim of the Bail Sheave**, so that the bundle can **swing freely** after the fork pulley is registered in the ear without wearing off the points of the hooks.

It is both **Reversible and Swivel**, so that the rope may be either drawn through it, or by simply changing the gable pulley from one end of the barn to the other, it may be swivelled when you wish to draw it to the opposite end of the barn.

It can be freely drawn through the Stop Block while in any position, and **will carry its load past any number of stops**, since they may be opened from the barn floor by means of **Gate Cords**. It is heavily built of the **best malleable iron**, and designed all through for extra hard work.

The **Travellers** are **large**, and have **wide bearings** on the track. They also have **chilled hubs**, and run on **inch axles**. The **Rope Wheels** have **chilled hubs**, and run on **large cored bushings**, fitted into **recesses** in the frame sides. This takes all the wear and strain off the bolts, and gives the carrier longer life than any other construction.

The "W. & B." Carrier is of very neat design, and presents a very handsome appearance. Weight complete, 30 lbs.

The BT Double Tee Steel Track

This track is composed of two steel rails in the shape of the letter "T," held together with malleable clamps, which hold the rails in place, leaving a space between them to admit of the Hanging Hook being placed immediately underneath the rafters without drilling—wherever they may happen to occur. This makes the track very easy to erect.

The joints are made by a three-bolt clamp, which is of sufficient strength to make the track as stiff and strong at the joints as elsewhere. The Hanging Hook shown in Fig. 468 serves as a clamp also, and aids greatly in holding the track in place, as well as suspending it.

This track is coupled together in the factory, so that it has all the advantages of a single rail track. The Tee's are 1 in. x 1 in. x 3/16 in. This track allows over $\frac{1}{2}$ -inch tread for the travellers, which is the widest tread of any track made.

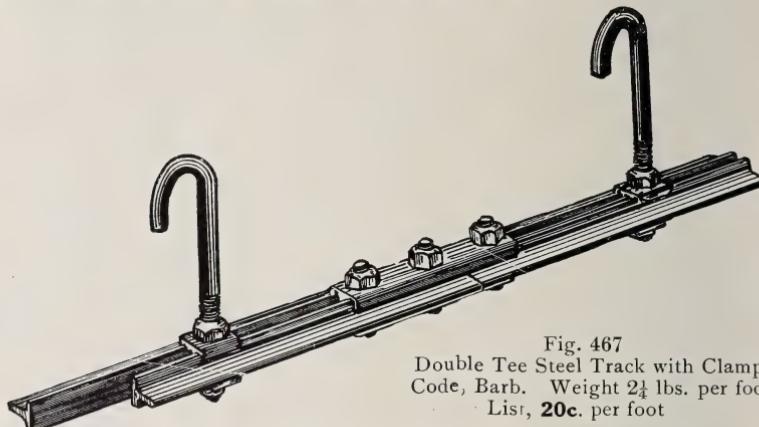


Fig. 467
Double Tee Steel Track with Clamps
Code, Barb. Weight $2\frac{1}{4}$ lbs. per foot
List, **20c.** per foot

The Wortman & Ward and "W. & B." Cars will run on this track. There are large quantities of this track in use, as it is used by Messrs. Myers Bros., Messrs. Cameron & Dunn, Messrs. Tolton Bros., and was also used by Messrs. Wortman & Ward. Any farmer having an outfit already installed, with this style of track, and desiring to make an extension, can purchase this track from us.

The hangers for the double Tee track can be used with our standard rafter bracket. This makes the track much easier to erect than if the ordinary "V" brackets were used, as the height can be easily adjusted.

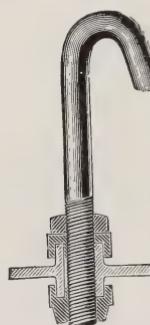


Fig. 468 (barge)
Hangers for Double Tee
Track
List, **15c.** each



Fig. 470 (Cling)
End Stop for Double Tee
Track
List, **40c.** per pair

Fig. 469 (Casey)
Extra Joint Clips for
Double Tee Track
List, **20c.** each

The BT "W. & B." Wood Track Unloader

Fig. 21
(Isabella)
List \$8.00
Complete
with Bail Pul-
ley and One
Stop Block

Weight 33 lbs

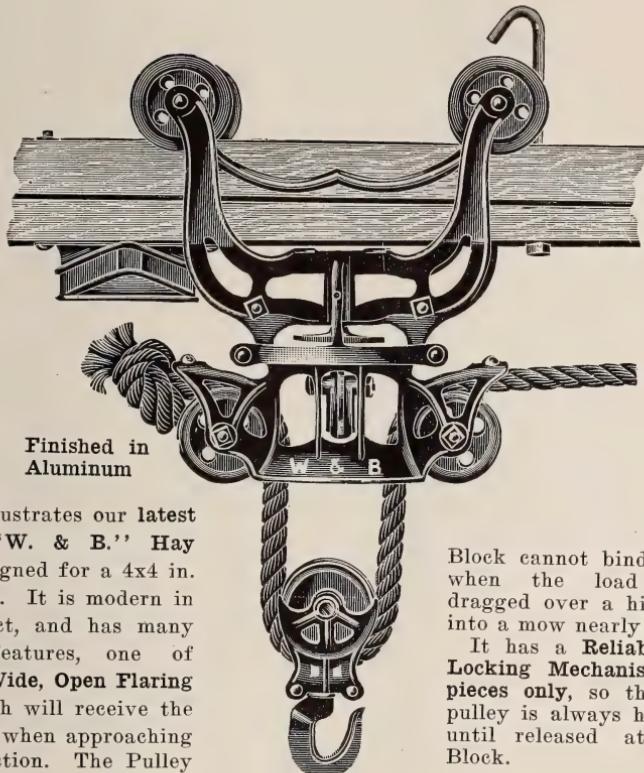


Fig. 21 illustrates our latest improved "W. & B." Hay Carrier, designed for a 4x4 in. Wood Track. It is modern in every respect, and has many excellent features, one of which is a **Wide, Open Flaring Mouth**, which will receive the Fork Pulley when approaching in any direction. The Pulley

Block cannot bind in the car when the load is being dragged over a high beam or into a mow nearly filled.

It has a **Reliable, Positive Locking Mechanism** of three pieces only, so that the bail pulley is always held securely until released at the stop Block.

The **Grappling Hooks** engage with the Rim of the **Bail Sheave**, so that the bundle can **swing freely** after the fork pulley is registered in the car without wearing off the points of the hooks.

It is **both Reversible and Swivel**, so that the rope may be either drawn through it or by simply changing the gable pulley from one end of the barn to the other, it may be swivelled when you wish to draw to the opposite end of the barn.

It can be freely drawn through the Stop Block while in any position, and **will carry its load past any number of stops**, since they may be opened from the barn floor by means of Gate Cords. It is heavily built of the **best malleable iron**, and designed all through for extra hard work.

The **Travellers** are **large**, and have **wide bearings** on the track. They also have **chilled hubs**, and run on **one-inch axles**. The **Rope Wheels** have **chilled hubs**, and run on **large cored bushings**, fitted into **recesses** in the frame sides. This takes all the wear and strain off the bolts and gives the Carrier longer life than any other construction.

The "**W. & B.**" **Carrier** is of very neat design and presents a very handsome appearance. Weight complete, 33 lbs.

The BT Rod Track Unloader

The "BT" Rod Track and Carrier is an ideal outfit for unloading hay or grain in any barn. The fact that the track is solid from end to end, requiring no troublesome bolts, hangers or malleable trappings to hold it together, eliminates many sources of trouble. The car runs smoothly on it, and is not affected by a side pull. Some old roofs could not stand the strain of any other track. It is better adapted for unloading at the gable end outside than other outfits, as it does not disfigure or weaken with posts or projecting beams.

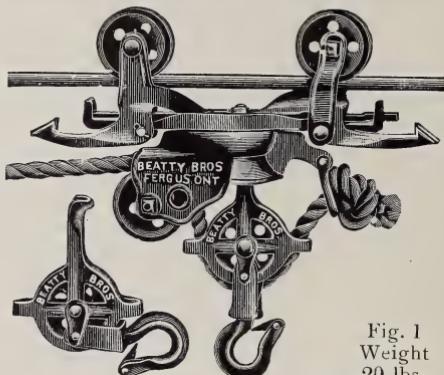


Fig. 1, (Gladys). List \$9.00

Fig. 1
Weight
20 lbs.

or when a load is being dragged into a mow nearly full.

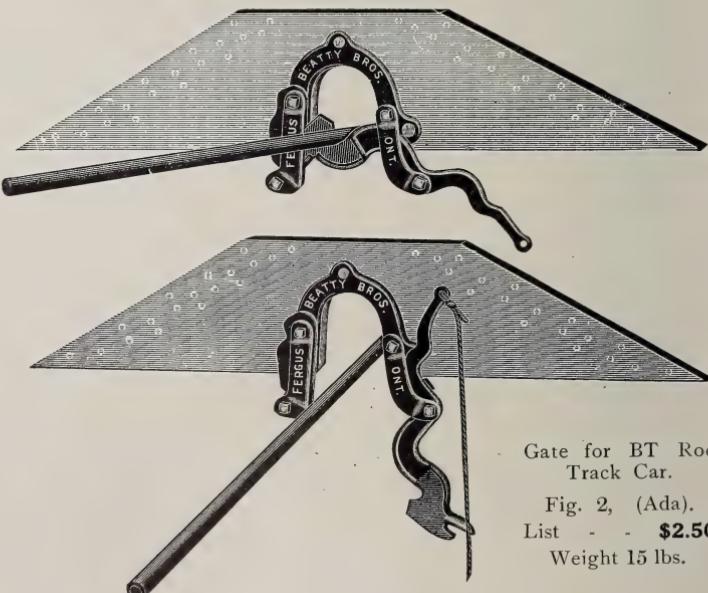


Fig. 2.

Gate for BT Rod
Track Car.
List - - - \$2.50
Weight 15 lbs.

The Gate or Stop Block is spiked securely to the central pair of rafters above the drive floor, thus supporting the track rigidly where the load is being elevated. The second cut shows the Gate open to allow the car to pass. As it is often necessary to carry loads over a drive floor, it is a great advantage for the Gate to open from the floor.

The “BT” Rod Track Unloader

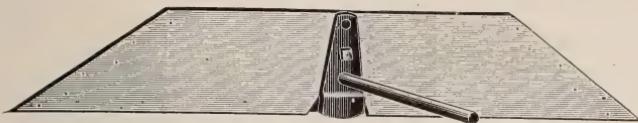


Fig. 5 (Clara)

Stop Casting Bolted on End Block to BT Rod Track Cars
List \$1.00 Weight 16½ lbs.

The **End Lift Casting**, illustrated in Fig. 5, is used when unloading at the Gable outside. We furnish this casting either by itself or bolted on the End Block, as illustrated.



Fig. 6 (Carson)

Centre Stop for Rod Track
List, \$1.50
Weight 4½ lbs.

The **track** is made of $\frac{3}{4}$ -inch iron. We can supply it full length for any barn **without** welds. In shipping, we coil it in a seven-foot circle. It can be easily straightened again. We also supply **threaded rod ends** with **heavy nuts** and **washers**, to be used with welded tracks.

For price of Track
see page 94, Fig. 180.

Fig. 4 illustrates **three pairs of braces**—AAA, and shows how the inward strain of the track is shared by 4 pairs of rafters.

The **Centre Drive Stop Block**, illustrated in Fig. 6, is used with the Rod Track Carrier in end drive barns. A $\frac{1}{2}$ -inch rod is suspended from the roof above to support the Stop.

Fig. 3 shows our **Collar Tie** or **End Block**, used to support the track at each end of barn. It is made of 5×5 in. maple, and has the **pulley hook** firmly screwed into it. It is already bored for nails and for the rod.

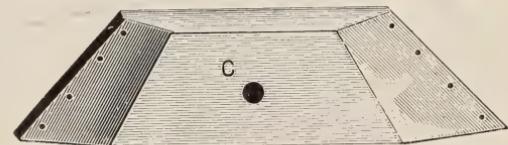
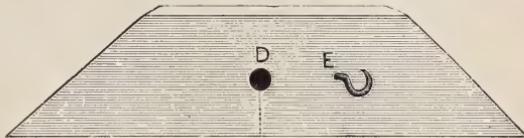


Fig. 3 (Claret) List, \$1.40 per pair. Weight 30 lbs.

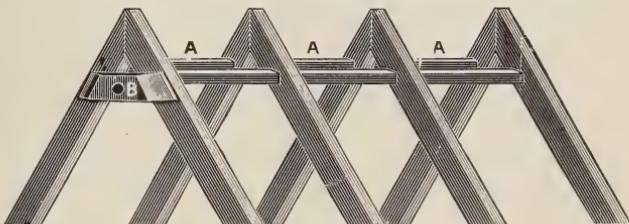


Fig. 4

A Rod Track Outfit can be installed in one-half the time required for any other.

Directions for the Erection of a Rod Track Outfit.

1. Draw the **Rod** in at the end of the barn through a $\frac{7}{8}$ -inch or 1-inch hole, a short distance above the floor, and shove it up over the high beams.
2. Draw the Rod close up to the peak by means of three or four small ropes passing over the rafters, or, better still, through the rings of grab hooks illustrated by Fig. 48.

3. Run a ladder up at one end of the barn, and make a light scaffold by placing one end of a 14-foot plank on a run at a suitable height and supporting the other end by a rope running through the rings of a pair of grab hooks.

4. Shove an **end block** on the rod with hook to the side of the track where the draft rope will be, and put on the nut and washer. Spike it centrally with 5-inch nails to a first pair of rafters in from the end of the barn.

5. Nail securely between the rafters and directly in line with the ends of the collar ties three pairs of tightly-fitting **braces**, as shown in Fig. 4.

6. When both ends are complete, tighten the rod as much as possible, and if too long, use **hardwood blocks** with $\frac{7}{8}$ -inch holes to take up the slack.

7. Spike on the **Gate** to a pair of rafters above the centre of drive floor, trimming the ends if necessary so that the **Rod**, when free, will lie exactly in the centre of it and about $\frac{1}{2}$ -inch above the **Groove** in the **Gate Lever**.

8. Screw **Floor Hooks** firmly into the purline plate and door post in such positions that the draft rope cannot rub.

The BT Cable Unloader

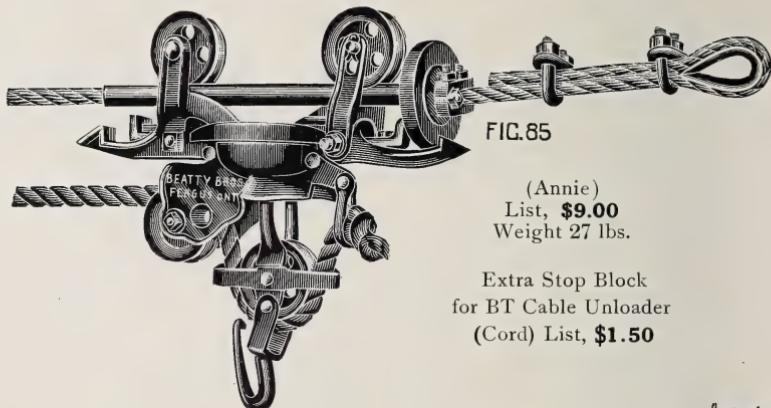


FIG. 85

(Annie)
List, \$9.00
Weight 27 lbs.

Extra Stop Block
for BT Cable Unloader
(Cord) List, \$1.50

For the "BT" **Cable Unloader**, illustrated in Fig. 149, the same carrier is used as for the $\frac{7}{8}$ -inch rod. It can be depended on under all conditions, and no amount of swinging or springing of the Cable will throw it out of adjustment.

By means of **Patented Side Straps** it can be quickly changed from one track to another, either Rod or Cable, without removing a single bolt.

The **Stop Block** is a **Round Plate**, so is always in the correct position for the carrier to engage with it.

We supply the cable and Cable clamps necessary. See page 76 for what is necessary.

FORK EXTENSION.

Fig. 219 represents an extension that can be used between the fork and the bail pulley. It is made of rope and can be any desired length. It is a very handy device in commencing a stack or for use in a barn without cross beams, as you only need to hoist the hay high enough to clear the load, thus saving much time. As the mow or stack fills up hook into the next link in the extension rope.



The Provan Steel Track Unloader

Our Provan Steel Track Unloader, with several important improvements, is shown in Fig. 8. This Carrier is well known and has won quite an enviable reputation for reliability. It is a **strong, simple machine**, and has several points of decided advantage over any other. It is built to run on the "BT" Double Steel Track as shown on page 74.



Fig. 8. (Hazel)
List \$9.00
With Bail Pulley
and One Stop
Block.
Weight 32 lbs.

1st.—It is both **Reversible and Swivel**, thus you can change from one end of the barn to the other either by swivelling or by drawing the rope through.

2nd.—The swivel in operating does not affect the locking device of the Carrier, which is **always in line** for registering on the Stop Block.

3rd.—The **Stop Block** is really a Gate, as it can be opened, allowing the Carrier to pass loaded. This is a necessary feature in a barn with two or more drive floors.

4th.—Owing to the hinge on the bail pulley, the load can swing freely without affecting the Bail Pulley in registering or tipping the Carrier in carrying the load over a high beam or when the mow is about filled.

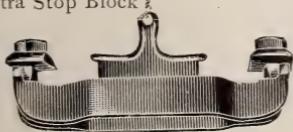
5th.—It will work either the Fork or any kind of Slings. As the registering head is perfectly round and small, it works well with self-locking Shir Pulleys. Many fork ears, owing to large registering head necessary when Shir Pulleys are used, will not work with Long Slings. Fig. 8 shows the Provan Carrier rigged with self-locking Shir Pulleys.

6th.—The Locking Device of the Carrier is reliable, and allows for considerable variations, such as wearing down of the track without getting out of adjustment with the Stop Block when used on wood track.

7th.—The track wheels are large, with $\frac{7}{8}$ -inch hardened bearings, assuring easy running on uneven tracks. The wheels are 14 inches apart, from 2 to 4 inches further than on other carriers.

8th.—It is strongly built throughout of malleable iron. The carrier complete with bail pulley and stop block weighs 32 lbs.

Fig. 113 (Civil)
Extra Stop Block



List 50 Cents

Fig. 113 shows the Provan Steel Track Stop Block and how the cord is attached to open the stop to allow the carrier to pass loaded.

The Provan Wood Track Unloader



Fig. 7. (Laura)
List \$9.00

Complete with Bail
Pulley and One
Stop Block
Weight 35 lbs.



Fig. 61. (Civil)
List 50 Cents

On page 74 of this Catalogue you will find a description of the Steel Track used with the Provan Steel Track Carrier.

Fig. 9 shows an end view of the Steel Track Car, illustrating the deep-grooved wheels, which make spreading of the frame impossible. This carrier stays at its work every time.

Note the large track wheels—much larger than in other Steel Track Carriers. The Carrier has a tread on the track of 14 inches, while most other carriers have only 10 inches.

The Provan Wood Track Carrier is built along the same lines as the Provan Steel Track Carrier, and has the same advantages, viz.:—

It is both Swivel and Reversible, has Locking Parts in Main Frame, Raise and Lower Stop Blocks, Hinge in Bail Pulley, Round Registering Head most suitable for use with Long Sling Shiring Pulleys, etc.

Complete with Stop Block and Bail Pulley, it weighs 35 lbs.

Fig. 61 shows the stop block for the Provan Wood Track Carrier. To allow the loaded carrier to pass this stop block the centre diamond-shaped casting must be raised. This can be done on a barn floor by means of a light cord if the track is recessed to a depth of $\frac{3}{4}$ -inch to admit the diamond and a hole bored for the cord.



Fig. 9.

The London Steel Track Unloader

To Work on Double Tee Track

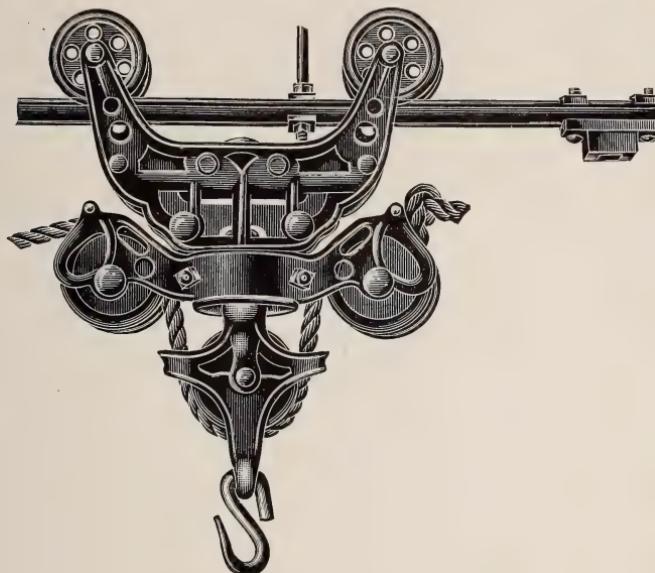


Fig. 471 (Babe)

List **\$8.00.** Complete with Bail Pulley and one Stop Block
Weight 38 lbs.

Extra Stop Block. Fig. 473. (Civil)
List **50c.** each.

Extra Bail Pulley. Fig. 474. (Caspar) List **\$1.50.**
Weight $6\frac{1}{4}$ lbs.

Fig. 471 represents the well-known and reliable carrier formerly manufactured by Messrs. Wortman & Ward, of London, for use on the double Tee track. The track is described and illustrated on page 80.

There are thousands of these carriers in use, and this type is better known than any other in Canada. The first of these carriers manufactured over 30 years ago are still giving good service. We recommend this carrier to all who want a strong and durable machine, as with ordinary care we believe it will last for fifty years.

The very enviable reputation earned by this carrier is largely due to the excellent way in which the locking device does its work and to the general strength and durability of the machine.

The Stop Block for the London Car on the double Tee track is shown in Fig. 471.

The Bail Pulley regularly used with this carrier is not a swivel pulley, so that if the load tends to twist it would have to turn the whole bundle. When using this car there is no trouble with new rope. When desired, we will, however, make a swivel pulley for this car.

The “London” Wood Track Unloader

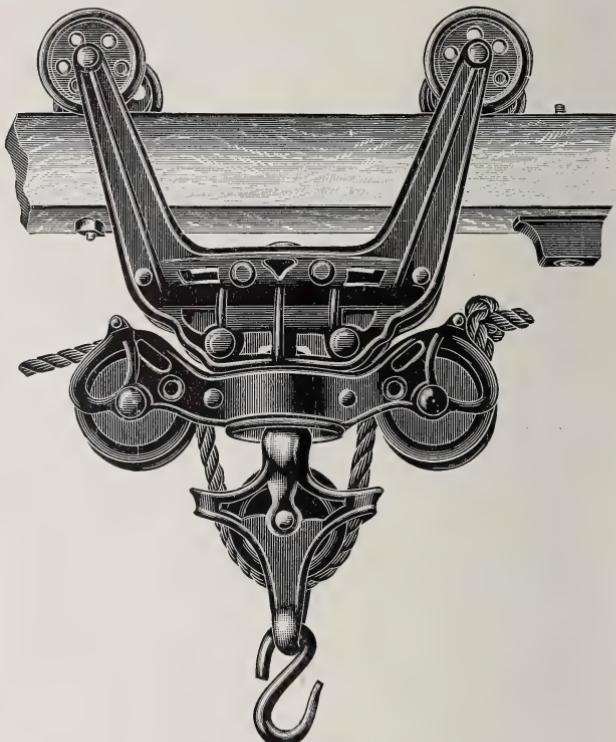


Fig. 472 (Baby)
List, \$8.00

Complete with Bail Pulley and One Stop Block
Weight 43 lbs.

Fig. 475 (Civil)
Extra Stop Block List, 50c. each

Fig. 472 represents the “London” Unloader, for use on wood track. This carrier has the same general characteristics as the “London” Steel Track Unloader, described on the previous page. Both these carriers are strong and simple and have the following great advantages:—

1st.—They are both **reversible and swivel**, thus you can change from one end to the other, by drawing the rope through.

2nd.—The Swivel in operating does not affect the Locking Device of the Carrier, which is **always in line** for registering on the stop block.

3rd.—Owing to the hinge on the Bail Pulley, the load can swing freely without affecting the Bail Pulley in registering or tipping the Carrier in carrying the load over a high beam, or when the mow is about filled.

4th.—It will work either with a fork or any kind of slings. As the registering head is perfectly round and small, it works well with self-locking Shir Pulleys. Many Fork Cars, owing to the large registering head necessary when Shir Pulleys are used, will not work with long slings. For description of the interlocking pulleys for this car, see page 90.

5th.—The Locking Device of the Carrier is reliable, and allows for considerable variations, such as wearing down of the track without getting out of adjustment when used on wood track.

6th.—It is strongly built throughout of malleable iron.

The BT Interlocking Pulleys



**REGISTERING HEADS, H
FURNISHED TO SUIT
ANY CARRIER**

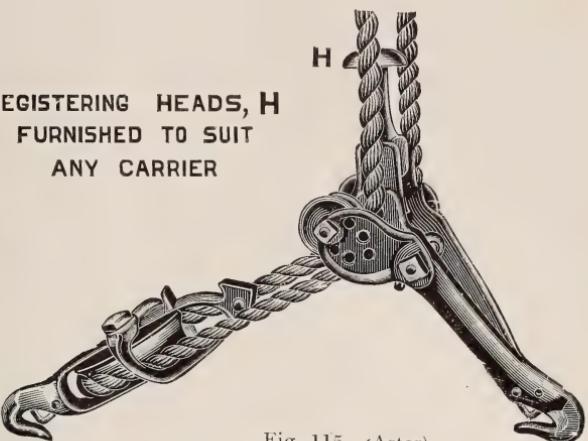


Fig. 115 (Aster)

List \$3.00 Per Set. Weight 11 lbs.

Fig. 115 illustrates a set of **Interlocking Pulleys**, locked and also separated. These are required in connection with the Provan Wood and Steel Track Cars, and the London Wood and Steel Cars, when long trip slings are to be handled. We supply the Large Sectional Pulley with a **tripping device** to use in connection with Long End Trip Slings. Provan Carriers handle these pulleys better than any other make, since the registering head is comparatively small and perfectly round. A swinging bundle or twisted ropes are not so likely to binder the pulleys registering in this carrier.

Interlocking End Trip Pulleys



Fig. 18 (Pink) List \$4.00

When it is desired to handle long slings or to have the shirring of the bundle done by the horses in connection with a fork carrier, it is necessary to use Interlocking Pulleys with suitable registering head.

Fig. 18 shows our Interlocking Pulleys rigged with **End Trip** for use with **end trip Slings**. They can be used with either End Trip Long Slings or Short Slings.

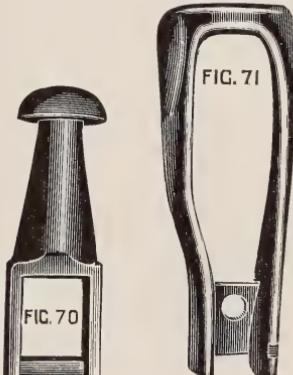
Fig. 70 illustrates the registering head for Provan Wood or Steel Track Carriers.

Fig. 71 illustrates the registering head for Beatty Rod Track Carriers.

Fig. 72 illustrates the registering head for Maple Leaf and W. & B. Carriers.

We can also furnish Interlocking Pulleys with Registering Heads to suit Whitman & Barnes, Buchanan, Cameron & Dunn, and Louden.

In ordering always mention the style of carrier the Interlocking Pulleys are to be used with.



Figs. 70, 71, 72 (Corn)
**Registering Heads
for Int. Pulleys**
List 50 Cents each



The McKay Patent Shirring Pulleys

Fig. 483 shows McKay's Patent Combination Pulleys in connection with our London Carrier. In loading, these slings are thrown loosely on the rack and one-third or one-half the amount of the load is built on, after which another set of ropes is thrown loosely over the top of the load already built, and so on, until two or three ropes are covered.

Triple power is used with the McKay Pulleys instead of double power. That is to say, three ropes come down to the load instead of two. One horse can handle the biggest sling load with these pulleys. The McKay Pulleys are very easily operated. One is hitched to the ropes at each end of the load. When the horse starts, the bundle is shirred, and the rope drawn all around it, making the bundle perfectly tight. When the pulleys meet they are securely locked to each other. The load is lifted until the bail pulley enters and locks itself securely into the ear, carrying the load high and neatly over the beam to the place required.

The slings are made to go the whole length of the rack, extending over each end. No stakes or standards are necessary.

The McKay pulleys are made to work either with our London steel and wood track ears or with our Provan ears, described on pages 85 and 86.

A previously pointed out on page 94, when it is desired to handle long slings or to have the shirring of the bundle done by the horses, in connection with a fork carrier, it is necessary to use interlocking pulleys. The great features of the McKay pulleys are the **triple purchase**, making only half the labor for the horses in raising the bundle—and the accuracy with which the pulleys meet and lock. Figs 476 and 477 illustrate these pulleys for use with end trip and centre trip slings respectively.



Fig. 483



Fig. 476 (Bag) For end trip
List, \$4.50 per set Weight 13½ lbs.



Fig. 477 (Bail) For centre trip
List, \$3.50 per set Weight 13½ lbs.

The Tolton Steel Track Sling Unloader

In 1909 we purchased the hay-carrier business of Tolton Bros., Guelph, including all patterns and patents. The Tolton Sling Carrier is a great favorite in many localities, **for it can always be depended on** to do its work. We will continue to build this carrier and have designed it to run on our heavy single rail steel track.

We will supply it to run on the Tolton Double Tee Track. It will also work on, and we have stop blocks to suit the Wortman & Ward Steel Tracks, the Cameron & Dunn Steel Track, and F. G. Myers & Bros., Steel Track.

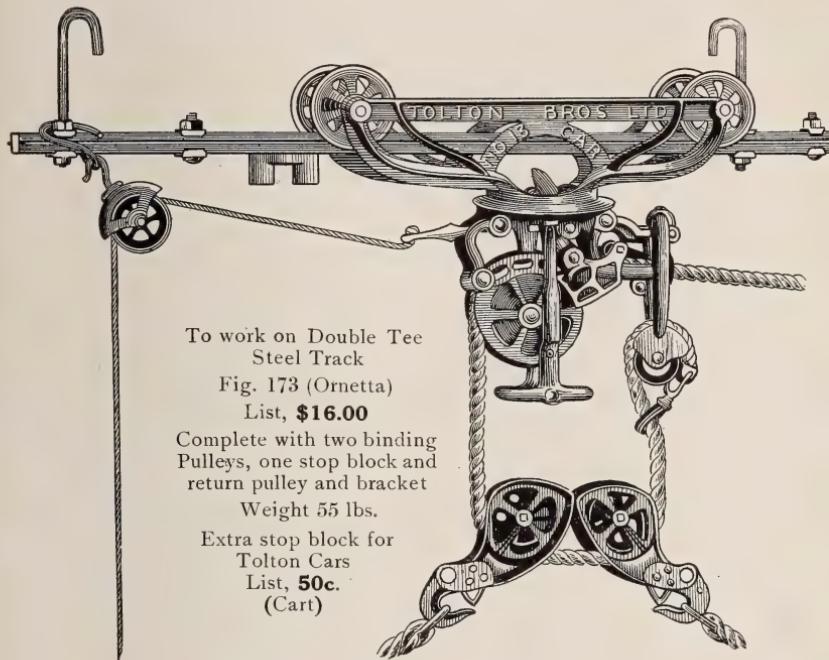


Fig. 173 illustrates the **Tolton Sling Unloader** for Steel Track known everywhere as the **Strongest and Best in Canada**. It is built for the **heaviest work** and has a **positive lock** and **rope grip** which are **absolutely sure**. With it and long slings any load of hay or grain can be pitched into the mow in two or three lifts. It **satisfies the user every time**. The following Facts tell why:

1. It has a powerful, one-piece, malleable **Truck Frame** and the **heaviest malleable iron Working Parts** of any unloader built. Its **strength** and **simplicity** ensure **certainty of action**.
2. It has an **18-inch wheel tread** on the track—the longest of any carrier on the market,—so distributing its load at all times over 6 feet of track and on 3 or 4 pairs of rafters.
3. Its **Draft Rope Wheel** is almost twice the diameter of any other so the bundles are much more easily elevated and the Draft Rope and Bearings will last longer.
4. The **Travellers** are the largest used by any firm so that the carrier excels in **Smooth and Easy Travel** on the track. They also have an **extra wide bearing** on the track which together with the **Strongly Ribbed Truck Frame** makes sure that the Carrier will stay on no matter how heavy the load.
5. It is equally well adapted for **double or triple power**, but with its **Big Draft Wheel** and **Double Purchase** only, heavy loads are as easily elevated as with triple purchase on other makes. This is of the greatest advantage, as the double power system saves from 30 to 50 feet draft rope and also twice that much travel for the team and driver of every bundle.

The Tolton Steel Track Sling Unloader

6. It is fitted with **Loose Binding Pulleys** in place of the old time, rope wearing and power-wasting interlocking pulleys.

7. The carrier can be released from the Stop Block so as to carry its bundle into the mow at any elevation desired.

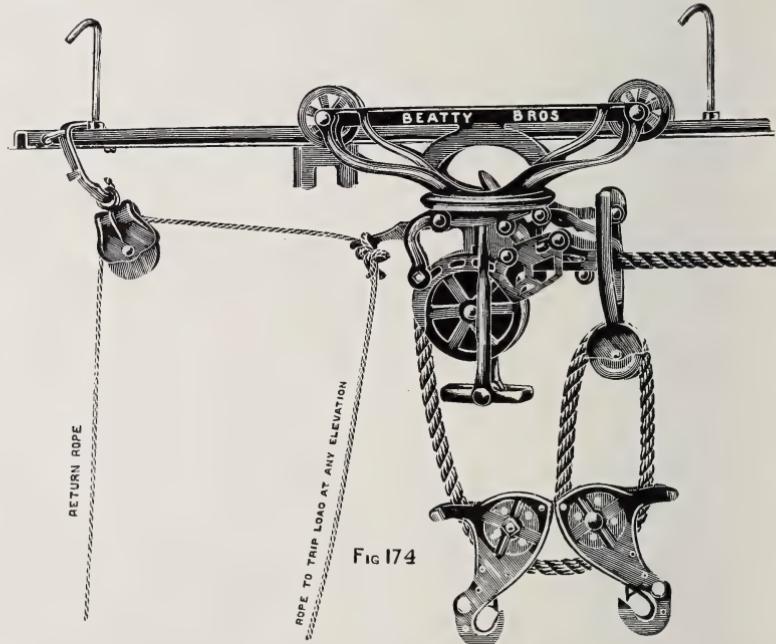
8. It will work equally well with $\frac{3}{4}$, $\frac{7}{8}$ or 1-inch rope without any adjustment being necessary.

9. It is a **Swivel Carrier** and can be reversed or changed in turn for fork and slings without climbing to adjust either carrier or stop block.

10. It will grip its **Load** and leave the Stop Block no matter how twisted the rope is since no plunger has to enter the car.

11. It does not contain a single spring, but has a **Powerful Lever Brake Grip** that will hold large or small draft ropes equally securely.

12. To make it perfect as an Unloading Outfit for the very hardest work we have adapted it to the **Heaviest and Strongest Hay Carrier Track in the World**, the new "**BT**" **Single Rail** which will safely carry ton loads when supported by rafters 3 feet apart.



To work on Single Rail Steel Track

Fig. 174. (Maidie)

List \$16.00

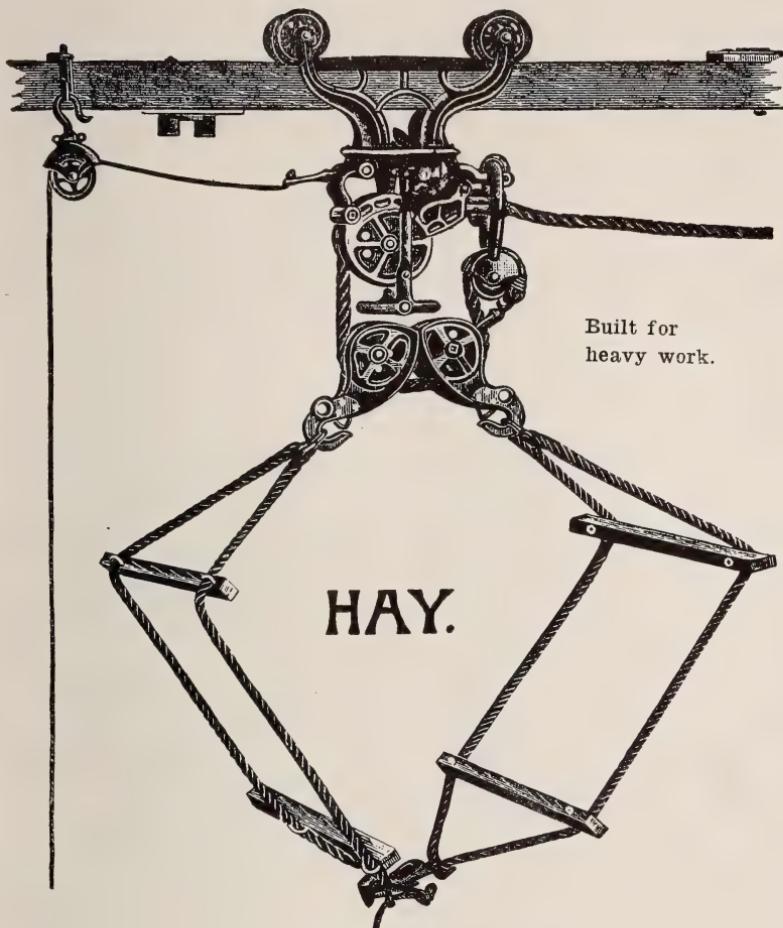
Complete with Two Binding Pulleys, One Stop Block and
Return Pulley and Bracket.

Weight 55 lbs.

Fig. 174 illustrates the **Tolton Sling Unloader** rigged for triple power. For use with fork remove one of the binding pulleys and hook the other into the fork eye.

Owing to the large draft wheel and the easy bend in the rope triple power is rarely used on this carrier, as it will lift as easily with the double power as other sling cars will with triple, so saves much travel for the horse.

The Tolton Wood Track Sling Unloader



Built for
heavy work.

Fig. 175 (Margaret)

List, \$16.00

Complete with two binding pulleys, one stop block,
return pulley and bracket
Weight 55 lbs. complete

Fig. 175 illustrates the Tolton Wood Track Carrier, which is built to run on a 4 x 4 in. wood track. It is built along the same lines as the Tolton Steel Track and has the same points of merit.

Two binding pulleys, one stop block, and one return pulley and bracket are furnished with each car.

Read description of steel track car for points of advantage. This car will **work well with long or short slings**. An end trip binding pulley similar to Fig. 110 is used with end trip slings. It also works well with a fork.

This Carrier was formerly built by Emerson & Co., of Tweed, and is sometimes known as the Emerson or Tweed Car.

The Tolton Rod Track Unloader

An ingenious inventor recently made it possible to work the Tolton Sling Carrier on rod and cable tracks, so that now, for the first time in the history of hay tools, carriers which tighten sling bundles by horse power, can be used on these styles of track. All other rod or cable cars use sling chains and require hand power to handle slings.

The Tolton Rod and Cable Cars embrace all the splendid features found on the Tolton Wood and Steel Cars.

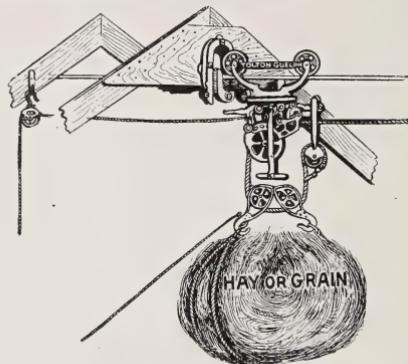


Fig. 177 (Greta) List, \$16.00

Complete with two binding pulleys, and one stop block, return pulley and bracket.

Weight, complete, 45 lbs.

The New Way—Bundle Shirred by the horses with the draft rope.

Fig. 178 shows the Stop Block and Gate for the Tolton Rod Track Sling Unloader. The Stop is designed so that it can be attached to "BT", Provan or Dillon gates. Any Farmer using one of the above machines may substitute one of our new Tolton Sling Cars for it without changing Track or Gate. This car shirs either long centre trip, long end trip, or short slings by means of the draft rope and horses. If you ever shirred a bundle with the old style sling chain you will appreciate this great time and labor-saving invention.

Fig. 179 shows the Tolton Carrier with one binding pulley removed, thus making a first-class fork carrier.

Fig. 180 (Cat)

Rod track any length without weld. Coiled with nuts and washers

List, 11c. per foot

Rod track, threaded, with nuts and washers. In 20 foot lengths. (Carpet)

List, 8c. per foot

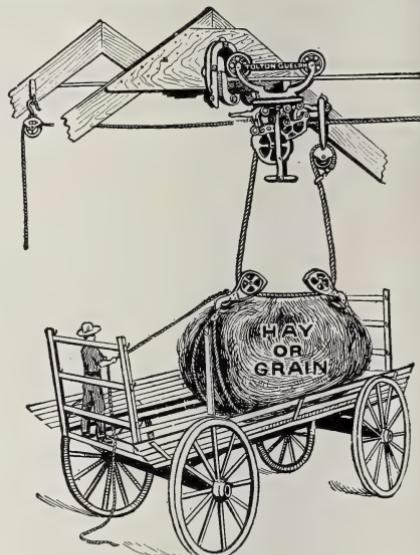


Fig. 181

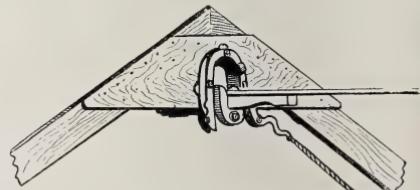


Fig. 178 (Hilda)
List, \$3.00. Weight, 19 lbs.

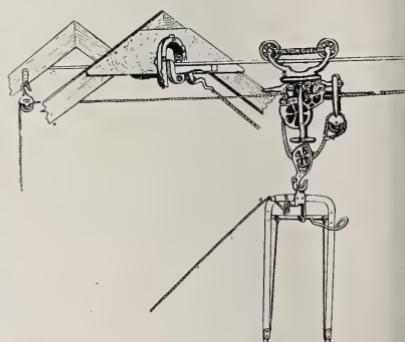
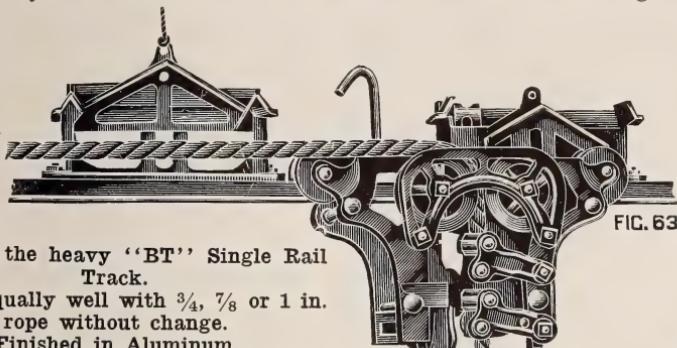


Fig. 179

The Tolton Rod or Cable Carrier, when used for stacking, has a splendid advantage over all other cable cars, as it can be tripped off the stop to carry the bundle just high enough to clear the stack and save much unnecessary elevating.

The BT Sling Unloader

The tendency everywhere is to use slings rather than a fork for unloading. A sling surpasses a fork in that it will handle bound grain equally as well as hay. It unloads a wagon with fewer lifts and always leaves the rack clean besides placing the hay in the mow in better shape for righthandling. Another advantage is that, with a good sling outfit such as the "BT," all that is necessary is to hook the ends of the slings into the binding pulleys and the horses do the tightening of the bundle so that a boy who could not set a fork is able to work a "BT" Sling Outfit.



Runs on the heavy "BT" Single Rail Track.

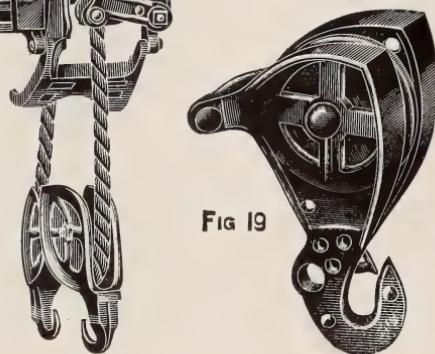
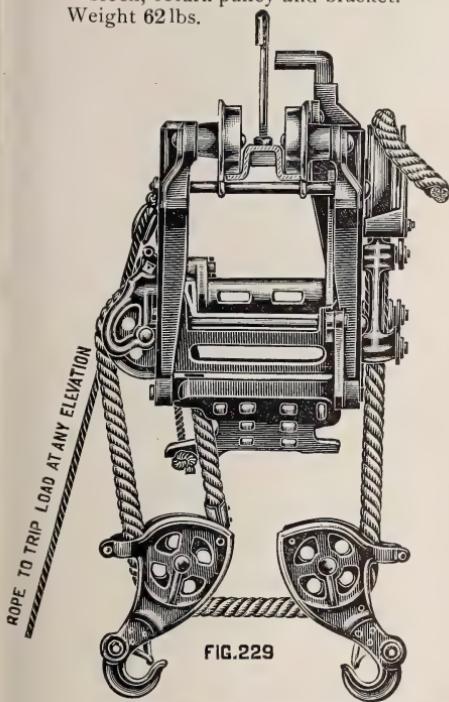
Works equally well with $\frac{3}{4}$, $\frac{7}{8}$ or 1 in. rope without change.

Finished in Aluminum.

Fig. 63 (Mable) List, \$16.00

Complete with two binding pulleys, one stop block, return pulley and bracket.

Weight 62 lbs.



List, \$1.50
Weight 5 lbs.

The "BT" Sling Unloader is the only sling carrier that uses Loose Block Binding Pulleys and at the same time carries the load into the mow at right angles to the track. Fig. 229 shows the Binding Pulleys used on the "BT" Sling Car and how it carries the bundle in relation to the track. This does away entirely with the quarter turn of the load which has been a serious objection to all sling cars unless they used a separate shirring attachment. (See page 98 for disadvantages of this arrangement.)

Depositing the bundle in the mow at right angles to the track saves one-half the mowing. (See Fig. 12.)

Using loose binding pulleys instead of interlocking shirr pulleys, the "BT" Sling Car saves about half the draft.

The "BT" Sling Car on the Steel Track carries the bundle from 6 to 9 inches higher than any other carrier. It increases the capacity of your barn by that amount.

It is strongly constructed throughout of Malleable Iron and there are no springs to give trouble.

The BT Sling Unloader

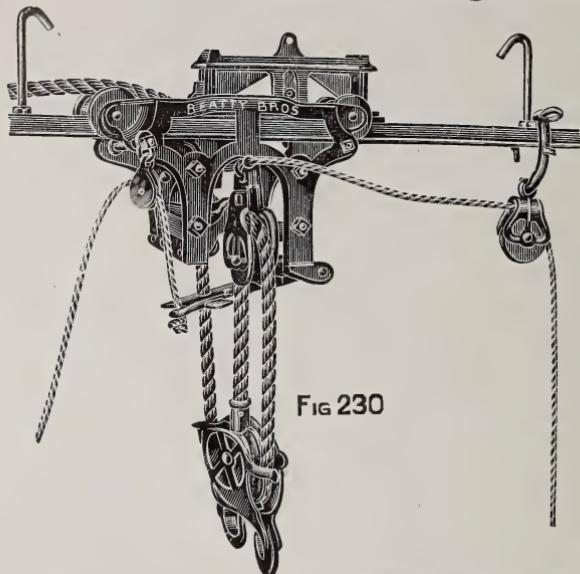


FIG 230

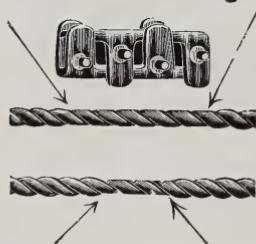
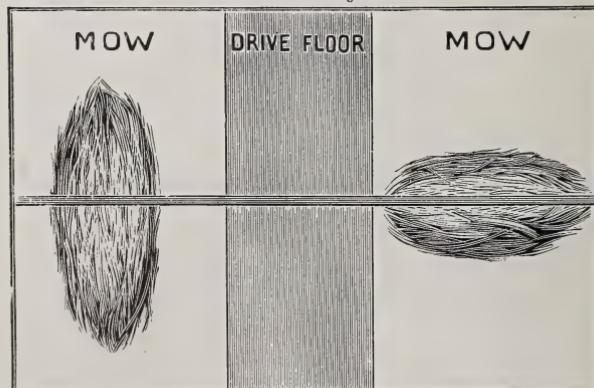


Fig. 13

There are no teeth in the rope grip of the "BT" Sling Car. It never injures the rope. It will handle without adjustment $\frac{3}{4}$, $\frac{7}{8}$ or 1 in. rope. The rope grip is 6 $\frac{1}{2}$ in. long where it bears on the rope, twice as long as on other carriers.

Another reason why the "BT" Sling Car never injures the rope is that as the rope grip tightens on the rope it lowers with the rope and does not tear when it locks on it.

Fig. 13 illustrates how a short rope grip filled with sharp teeth injures the rope, as used on other carriers, while the long rope grip on the "BT" Car cannot injure it.



The Right Way

Fig. 12

The Wrong Way

List \$2.00 ea. Weight 5 $\frac{3}{4}$ lbs.

Fig. 12 illustrates the saving in mowing, resulting in the way the "BT" Sling Carrier drops the bundle—remember the "BT" Carrier is the only Carrier using Loose Block Pulleys that deposits the bundle into the mow lengthwise.

Fig. 110 shows the Binding Pulley used for end trip sling. The "BT" Sling Car handles well end trip slings either long or short. To work a fork with a "BT" Sling Car, all that is necessary is to remove one of the binding pulleys, which can be done on the floor.

The "BT" Sling Carrier will work equally well with triple or double draft. Fig. 230 shows the carrier rigged with triple power pulleys.

Note how the rope is attached for tripping the car off the stop, with the load at any height. This is a great advantage, for in barns without cross beams, or with low ones, the bundle can be carried into the mow as soon as it will clear the load, and so save much elevating.

When using Centre Trip Slings with the "BT" Sling Car the half of the sling carrying the trip rope can be attached to either binding pulley, as the bundle does not take a quarter turn and so cannot drop on the trip rope.

Fig. 110
(Geranium)
End Trip
Binding
Pulleys



The BT Sling Unloader

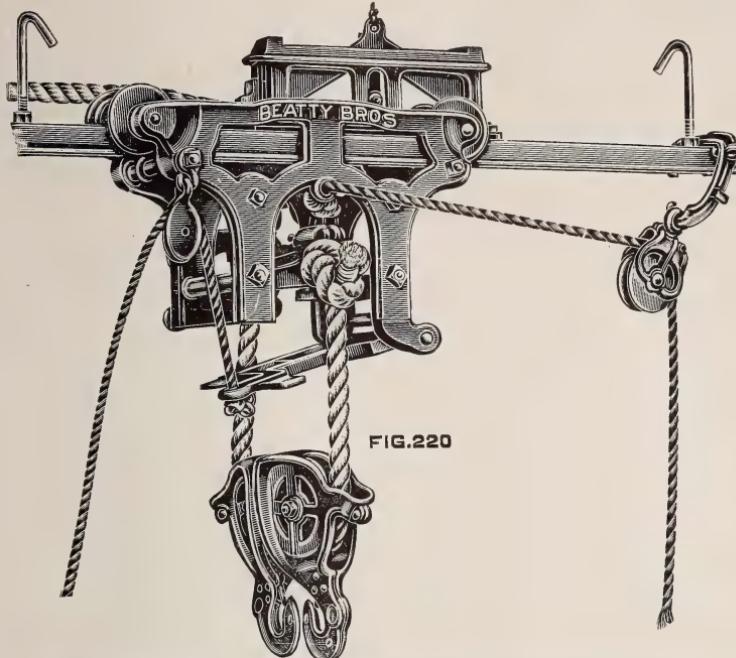


FIG.220

The "BT" Sling Carrier is the easiest on earth to reverse. 1st—Raise the stop block by the gate cord attached. 2nd—Change the draft rope to the other end of the barn and draw the carrier over to the mow you wish to work in. 3rd—Change the return rope to the other side of the stop block and you are ready to work.

There is no swivelling of the car half way round on the stop block required.

The first part of a carrier to wear out is the sheave which the draw rope runs over. In the "BT" Sling Car the rope runs over a different pulley for each side of the barn so that it will last twice as long as the other styles.

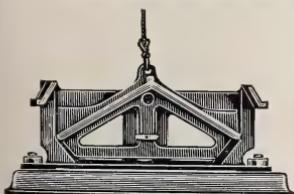


FIG.221

Figs. 221-222. (Cope)
Extra Stop Blocks for BT
Steel Track Cars.
List \$1.00 each
Weight 6 lbs.

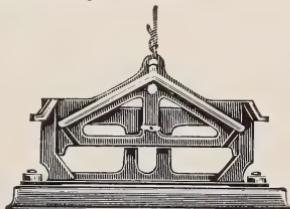


FIG.222

The Stop Block on the "BT" Sling Car can be opened from the floor. In this it has a great advantage over any other style of sling car. In a two-drive floor barn either stop can be raised and allow the carrier to pass it loaded.

In reversing, the stop blocks must always be opened, as shown in Fig. 222. When erecting the outfit a small cord should be attached as shown in this cut for this purpose.

The "BT" Sling Car is very strongly constructed throughout of malleable iron. Its weight complete with stop block and two binding pulleys is 62 lbs.

The wheels have a spread on the track of 16 inches—from two to six inches greater than any other sling car. With such a spread it is unnecessary to use eight wheel trucks as used on other sling outfits for the track wheels are further apart on the "BT" than the outside wheels on any eight-wheeled car.

The track wheels are large and there being only four large wheels, the carrier runs very easily on the track. They also have a very wide tread on the track and as the carrier frame is braced immediately below the track it is impossible for it to spread, no matter how heavily loaded.

The "BT" Sling Car running on the "BT" Heavy Single Rail track is strong enough to carry a whole load if necessary. For fast and heavy work it is the outfit to install.

Binding Pulleys vs. Interlocking Pulleys

The "BT" Sling Unloader does away with the use of Interlocking Pulleys in handling either long end trip or centre trip slings.



Fig. 15
(Carnation)
Binding
Pulleys
List \$1.50 ea

All dealers and farmers who have handled **Interlocking Pulleys** know that they are not satisfactory. The draft rope bending round such sharp corners works very hard, and is soon worn out. They are also heavy for the operator to draw back to the load. They often give annoyance, if the bundle is too large, in not locking, and it is necessary always to hook the half of the sling, having the trip rope attached, to the same block. The **loose binding pulleys** have



Fig. 14

none of these objectionable features. They put no sharp bend in the rope; they draw down easily, and never injure the rope. Any size of bundle can be shirred with them, as it is not necessary for them to lock, and they only take one length of the load of rope to tighten the bundle, instead of two, as in the shir pulleys. They separate more easily to each end of the load, and shir the bundle together in just half the time required by interlocking pulleys.

Note in Fig. 15 the simplicity of these **Binding Pulleys** used with the Beatty Sling Carrier, and the easy bend on the rope. You will see at once that they will draw down easily, and will not injure the rope.

Note in Fig. 14 the intricacy of these **Interlocking Pulleys** and the many sharp bends in the draft rope, making them hard to pull down and hard on the rope.

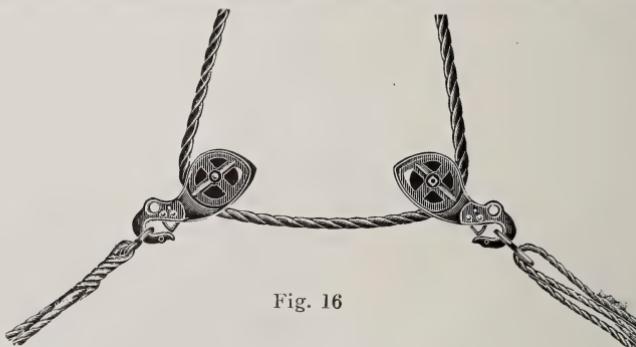


Fig. 16

Fig. 16 shows our **Loose Binding Pulleys** for Centre Trip Slings. We also make them for use with the **End Trip Slings**, one block tripping to discharge the bundle.

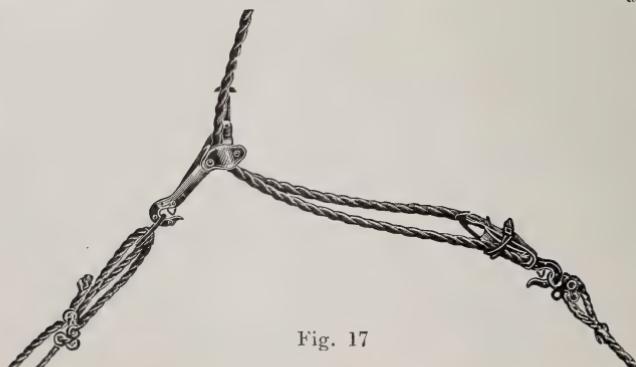


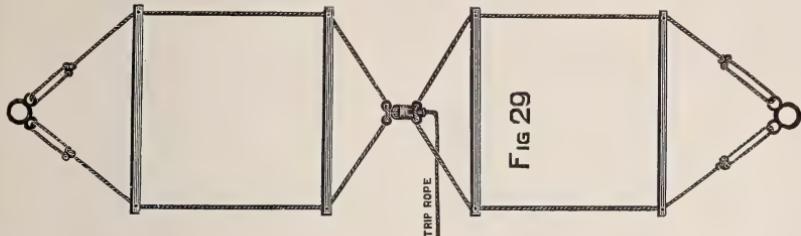
Fig. 17

Fig. 17 shows that when **Interlocking pulleys** are used it takes an amount of rope equal to twice the load to shir the bundle, and also that it is more difficult to separate the blocks and hook them on the ends of the slings than the Single Beatty Binding Pulleys.

The BT Centre Trip Slings

The "BT" Centre Trip Slings are well made. Soft Laid Pure Manilla Rope only is used, so that the ropes never become knarled up. The Slats are made of good hardwood, $1\frac{1}{4} \times 1\frac{3}{4}$ inch, well oiled, and the ropes are attached by adjustable hooks. The Slings may be lengthened or shortened to suit any length of rack. The Centre Trip is made entirely of malleable. It cannot be broken and will trip in any position. We make the Slings in three widths—4, 5 and 6 feet.

Fig. 29. (Violet)
Long Slings, Centre Trip. 4ft. Slat and 2 Rope
List \$3.50 each. Weight 60 lbs. set of three



The "BT" Four-Foot Centre Trip Slings, illustrated in Fig. 29, have two ropes and four spreaders. The rope we use is $5\frac{1}{8}$ -inch Pure Manilla.

Fig. 94. (Tulip)
Long Slings Centre Trip. 5 ft. Slat and 3 Rope
List \$4.50 each. Weight 70 lbs. set of three

Fig. 172. (Poppy)
Long Slings Centre Trip. 6 ft. Slat and 3 Rope
List \$5.50 each. Weight 85 lbs. set of three

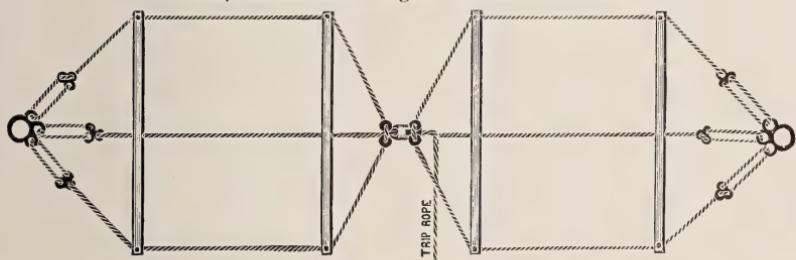


Fig. 94 illustrates the "BT" five and six-foot centre trip slings. They are made of the best $\frac{1}{2}$ -inch soft laid pure Manilla Rope with three ropes running the full length. The soft laid rope we use will not knarl or twist. The six-foot slings have extra heavy slats. All slats are made of the best dry hard maple.



Fig. 121. (Phlox)
Centre Trip Sling
Lock.
List \$1.00 each
Weight $2\frac{1}{2}$ lbs.



Fig 225

Figs. 121 and 225 show the "BT" Centre Trip for centre trip Slings. It is made entirely of malleable iron. It is easily set and will trip in any position. It never gets out of order and will lock no matter on which side either of the slings is lying.

BT Return Pulley and Brackets

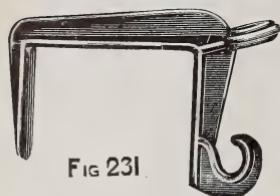


FIG 231.

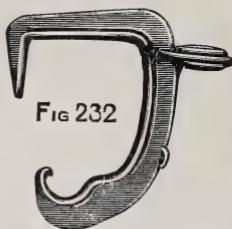


FIG 232



FIG 233

FIG.504.

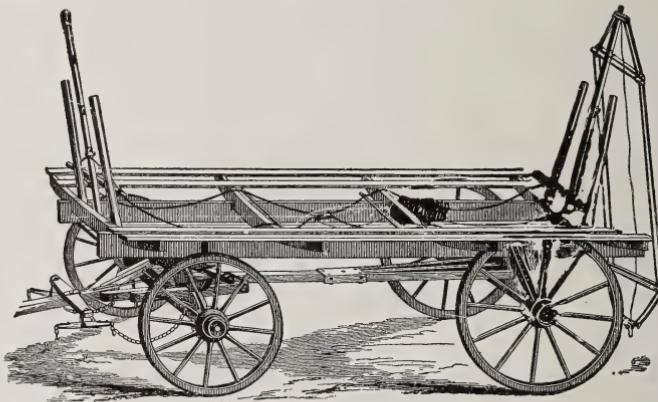
Return Pulley Bracket for Steel Track, Fig. 232. List, **50c.** (Albert)
Return Pulley Bracket for Wood Track, Fig. 231. List, **50c.** (Allow)
Return Pulley only, Fig. 233. List, **50c.** (Alto)

Fig. 231 illustrates the "BT" Wood Track Return Pulley Bracket.

Fig. 232 illustrates the "BT" Steel Track Return Pulley Bracket.

Fig. 233 illustrates the "BT" Return Pulley. Note how the sheave is protected.

Fig. 504 illustrates the Hook for Return Pulley used with an end lift. See page 111, Fig. 202,



This cut shows the Wagon with Slings, one placed on bottom to receive the grain or hay, and also shows the mode of carrying slings when not on the load.

Fig. 30 illustrates the "BT" Long Sling taking off a bundle of hay with self-binding pulleys. Two or three drafts will clean the load.

These Slings have been thoroughly tested, and we warrant them to be superior in the material and in ease of operation to any other Slings made.



The BT Line of Slings

In All Our Slings We Use Pure Manilla Rope.

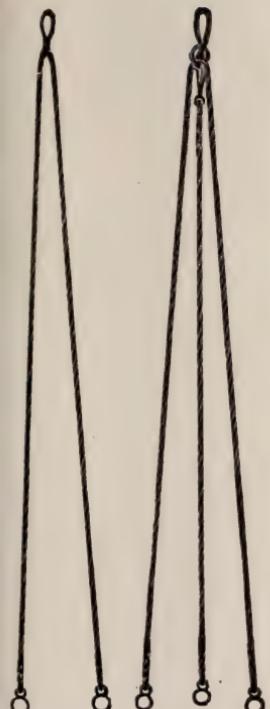


Fig. 27

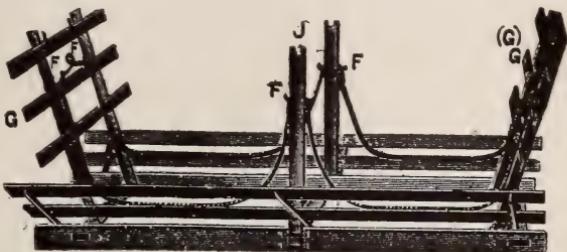


Fig. 447

Fig. 27 illustrates the "BT" Short Slings. These Slings will work on any style of Carrier which will handle a fork. Four Sling Ropes and one Sling Chain are required to make up a set. The Beatty Sling Ropes are made out of half-inch non-kinkable pure Manilla Rope and have malleable links spliced on the end to prevent wear.

The "BT" Sling Chain has an open trip hook which is locked in position before the Sling Ropes are put on. The Chain Clutch is provided with a roller so that the bundle may be tightened with half the pull, two points of advantage over any other. The Chain is $6\frac{1}{2}$ feet long, a foot and a half longer than the chain used by most firms.

Fig. 28 illustrates the "BT" Three-Rope End Trip Slings. We make these in both Short and Long Slings, to run half the length or the full length of the load.



In the Short Three-Rope Slings, four go to a set and they work with the Sling Chain. The Centre Rope is made removable with a Snap so that two ropes only may be used in long grain or hay.

Fig. 478 shows the "BT" Two-Rope Short Extension Slings. They are fitted with malleable rings by the means of which the the sling may be lengthened or shortened as desired. We also make Three-Rope Short Extension Slings on the same principle.

The "BT" Three-Rope Long End Trip Slings are 21 feet in length. They are made to lengthen and shorten for different lengths of waggons and have rings spliced on the ends to prevent wear. Three Slings are required to make a set, and they work with either Binding or Interlocking Pulleys, illustrated on page 103.

Fig. 1A illustrates a waggon rack rigged to handle short Slings. Note the Centre Stakes held by clips on the side of the rack. These stakes may be drawn out when the slings are not being used. We supply these Stake Clips for attaching to the sides of the rack. Four are required for a set. The loose ends of the Sling Ropes should always be put on the centre stakes, so that they can be handily attached to the tripping block.

- Fig. 109. (Rose) Long Slings, End Trip, Three Rope. List \$2.50 ea.
- Fig. 27. (Pansy) Short Sling Ropes (2 Rope with $\frac{1}{2}$ in. Manilla Rope) List \$5.00 per set of four.
- Fig. 478. (Dahlia) Short Sling Ropes, Extension (2 Rope with $\frac{1}{2}$ in. Manilla Rope) List \$7.00 per set of four.
- Fig. 28. (Daisy) Short Sling Ropes (3 Rope with $\frac{1}{2}$ in. Manilla Rope) List \$7.50 per set of four
- Fig. 484. (Cabbage) Short Sling Ropes, Extension (3 Rope with $\frac{1}{2}$ in. Manilla Rope) List \$9.00 per set of four.
- Fig. 447. (Lily) Sling Chain. List \$3.00 each.



Fig. 478

The BT Line of Forks

The "BT" Square Top Lock Lever Fork is illustrated in Fig. 25. More of these are sold and used in Canada than of any other make. This fork is made entirely of steel and malleable iron, is heavily built and has great capacity. Note how close the Rocker-bar is to the top of the Fork, bringing the load *closer* to the top of the barn than any other Fork. The lock is positive, and requires no spring. The Fork will trip in any position.

Fig. 26 illustrates the same Fork opened ready to go into the hay. It locks open as well as closed. The distance from Rockerbar to point is 32 inches. The long lever used in closing the Fork folds down when the Fork is locked. This Fork always gives satisfaction. Its weight is 24 pounds.

Fig. 23 illustrates the well-known "BT" Round Top Fork, designed and patented by us in 1904. This is a light, strong Fork of large capacity. The frame is made of **spring steel**. The side rods are made of $\frac{1}{2}$ -inch steel and all the castings are malleable. The round shape of the frame gives it great strength. The Trip Rope passes through the centre of the Rockerbar, so no matter how the bundle may turn, the fork can be easily tripped.

Fig. 24 illustrates the Round Top Fork opened ready to go into the hay. Note the very long lever used to close the fork. No other has as much leverage, or is as easily closed.

This Fork has a special advantage when used in connection with a Rope and Pulley Outfit, since when the load is being dragged over beams there are **no sharp corners or projecting levers** on it to catch.

This Fork is a great favorite wherever used. It weighs 20 pounds.

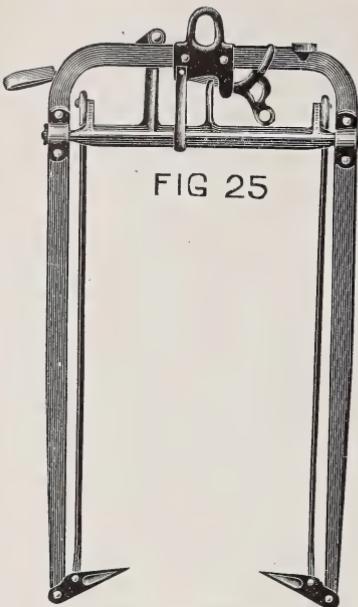


Fig. 25. (Wood)
List \$5.00 each
Weight 24 lbs.

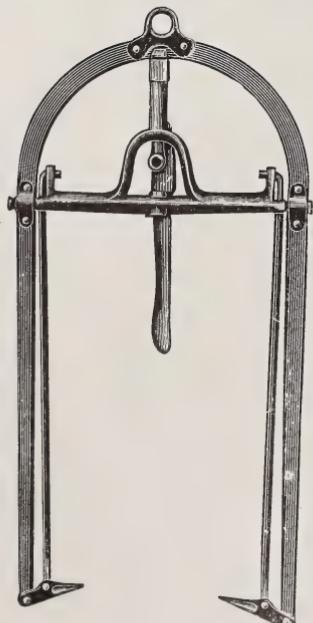


Fig. 23. (Coal)
List \$4.50 each
Weight 20 lbs.

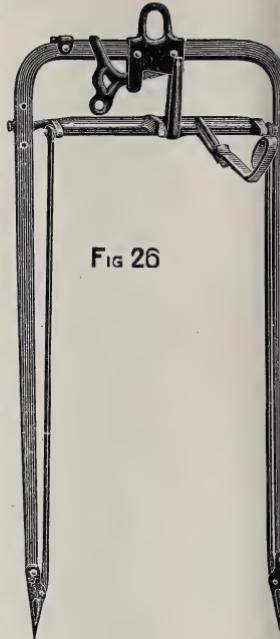


Fig. 26

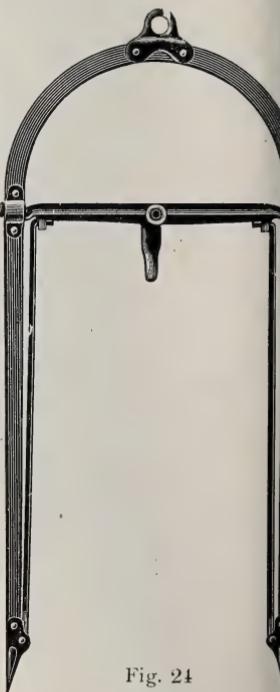


Fig. 24

The BT Line of Forks

The Quebec Fork, illustrated in Fig. 148, is a strong, well made fork. The frame is double, which gives it additional strength, and is made of high carbon steel. The fork is easily closed by pushing down on the lever. This fork has a large eye to receive the fork pulley and can be used with any make of carrier. We make this fork in the two sizes. Fig. 148 is 28 in. and Fig. 149 is 33 in.



Fig. 148 (Tin)
28 inches
List, \$6.50
Weight 20 lbs.

This is the same fork as was formerly manufactured by Messrs. Wortman & Ward of London, under the name of "Old Reliable Double Harpoon Fork." Although there are well over 35,000 of these in use, covering the sales for 30 years, there is practically no calls for repairs. The points are so rigid that they can be driven into the hay no matter how tightly packed, without any tendency to turn. The points are straight when the lever is up, and cannot catch or hold the hay, when the mow is nearly full. The lever is down when fork is set and is entirely out of the way of the fork pulley or any other obstruction.

Fig. 171 represents the "BT" Automatic Grapple Fork. When open it has a spread of 68 in., which is nearly a foot more than any other Grapple Fork, and gives it exceptional capacity. The tines and arms are of the best high carbon steel, well sharpened and polished. It is strongly built throughout and will stand heavy work.

Previous to returning fork to the load, the operator by pulling sharply on the trip rope closes the fork and locks it as shown in Fig. 171.

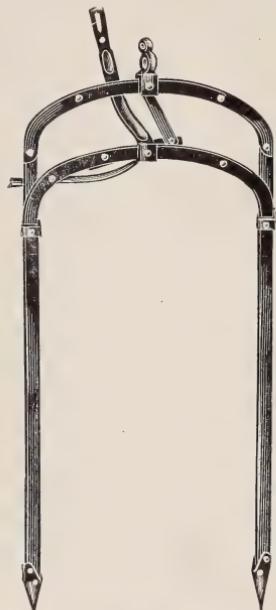


Fig. 149 (Zinc)
33 inches
List, \$7.00
Weight 24 lbs.

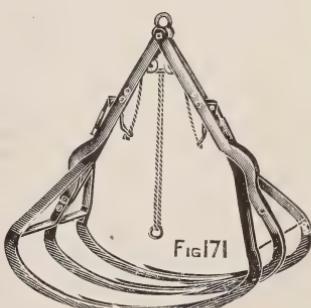


Fig. 171 (Steel)
Triple grapple fork
List, \$13.00 Weight 51 $\frac{1}{2}$ lb.

The BT Line of Forks

WALKER FORK
OPEN

WALKER FORK
CLOSED

DOUBLE HARPOON FORK.



FIG. 103

Fig. 103 (Diamond)
25 inches

List, **\$2.40** each Weight 16 lbs.

Fig. 104 (Gold)
31 inches

List, **\$2.80** each Weight 18 lbs.

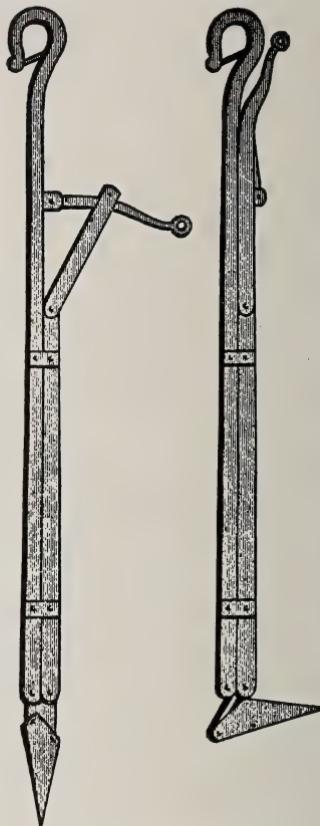


Fig. 105 (Silver)
List, **\$3.60** each
Weight 11½ lbs.

Fig. 106 (Nickel)
Walker Fork

List, **\$3.00** Weight 10 lbs.

Fig. 103 shows our **Double Harpoon or Harris Fork**. We supply it in two sizes, viz., 25-inch and 31-inch. It is strongly constructed of steel and malleable iron.

Fig. 106 shows our **Single Harpoon Walker Fork**, both open and closed. This Fork is strongly constructed, all parts being forged out of steel. The top of the Fork is formed into a hook, so that it can be readily attached to a pulley eye when used with a drag.

Fig. 105 shows our **Single Harpoon Fork of Nellis Pattern**. This Fork locks automatically, and so is ready to elevate its load as soon as it is shoved into the hay.

Hoisting Single Tree

This very useful article will prevent the Whiffletree from dragging on the horse's heels.

Fig. 496 (Clam)
List, **\$2.00**



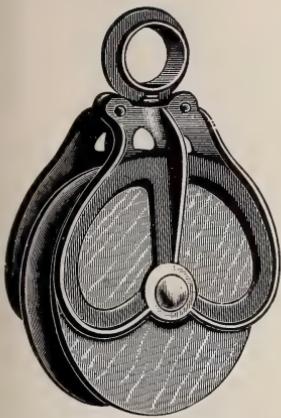


Fig. 35. (Abrupt)
List **50c.** each. Weight $2\frac{1}{2}$ lbs.

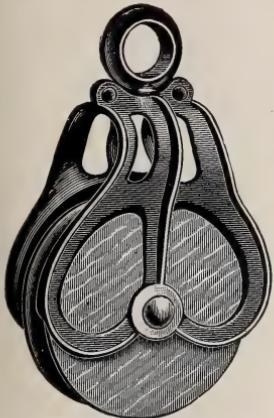


Fig. 37. (Abstain)
List **60c.** each. Weight 3 lbs.



Fig. 36. (Access)
List **60c.** each
Weight $3\frac{1}{2}$ lbs.

The frame of the BT Malleable Pulley is made of extra heavy malleable iron. You will notice it protects the sheave down past the centre axis, so that it is absolutely impossible for the rope to get in at the side of the pulley. No other pulley gives as much protection. The eye is heavily ribbed, and has a tubular swivel, which will never break.

The sheaves run on inch metallic bushings. The sheaves are let into recesses in the sides of the frame, and held there by a bolt. At any time, the sheaves can handily be taken out. They are over 6 inches in diameter. On the wood pulleys, the sheaves are made of thoroughly seasoned hard maple, smoothly turned and boiled in oil.

Figs. 35 and 36 show the ordinary Wood and Iron Sheave Pulleys.

Figs. 37 and 38 show the knot-passing Wood and Iron Sheave Pulleys.



Fig. 38. (Account)
List **70c.** each. Weight 4 lbs.



Fig. 387
(Assassin) List **\$1.20**

BT 7-in. Malleable Frame Pulley (Fig. 387).

This pulley is made along the same lines as the 6-in. pulleys shown above. Being larger, it is easier on the draft rope, and the draft is easier for the horses, when used with heavy loads. This pulley protects the rope perfectly, and we believe it is the best pulley that can be purchased for Hay Carrier work.

We supply it with sheaves to suit either rope or cable, and with the sheave made of either iron or wood. The frame is constructed large enough to enable a rough splice or knot to go through.

Weight with Iron Sheave, 7 lbs.

Weight with Wood Sheave, 6 lbs.

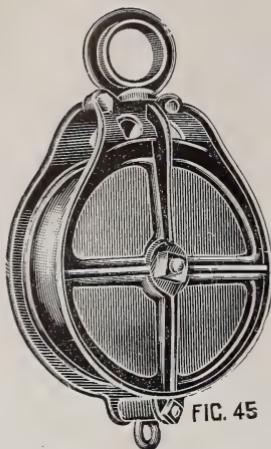


FIG. 45

Fig. 45. (Adamant)
List 60c. each. Weight 3½ lbs.

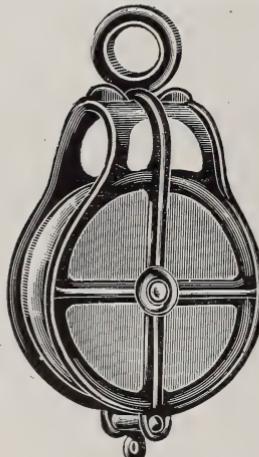


Fig. 389. (Abeard)
List 70c. each. Weight 4 lbs.

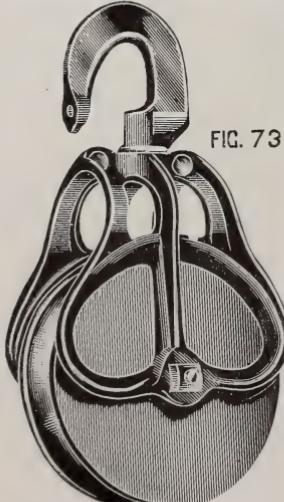


FIG. 73

Pulleys with Hooks same prices
as Standard Pulleys with eye

The BT Floor and Hook Pulleys

The BT Floor Pulley is built for hard work. The frame is made of the best malleable iron and will not break. By means of a small eye, this pulley may be held in any position desired. The flange sides of the frame protect the rope perfectly. The sheave is 6 inches in diameter, and runs on an inch cast axle, which is held in the sides of the frame.

Figs. 45 and 74 show the Wood and Iron Sheave Floor Pulleys.

Figs. 389 and 388 show the Wood and Iron Sheave, Knot-passing Floor Pulleys.

The BT Pulleys with Hook

We supply any style of pulley we make with a Hook, instead of the eye. These hooks are very strong, and will stand any strain. This style of pulley is the best to use when a fork and rope is used as a drag, or for any ordinary block and tackle work.

We generally supply these pulleys with our standard malleable frame, as shown in Figs. 73 and 403. We supply them with either wood or iron sheave, as may be desired. The weights are about the same as for the pulleys with eye.

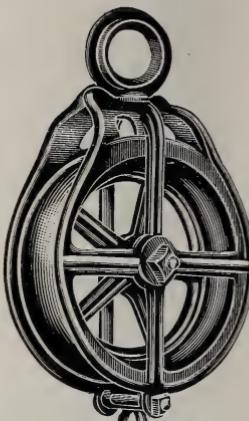


FIG. 74

Fig. 74. (Alpha)
List 70c. each. Weight 4½ lbs.

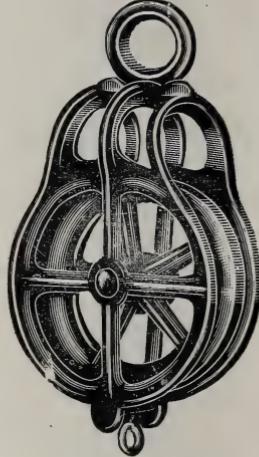


Fig. 388. (Abbott)
List 80c. each. Weight 5 lbs.



Fig. 403

Pulleys with Hook same prices as
Standard Pulleys with eye.

The Wortman & Ward Cast Metal Frame Pulleys



Fig. 376. Fig. 377.



Fig. 378.



Fig. 379.



Fig. 380.



Fig. 381.



Fig. 382.



Fig. 383

Fig. 376 (Ban). 4-in. Economy Iron Sheave Pulley. Wt. $3\frac{1}{2}$ lbs. List, 36 cents each.

Fig. 377 (Banker). 4-in. Economy Wood Sheave Pulley. Wt. $2\frac{1}{2}$ lbs. List, 36 cents each.

Fig. 378 (Banking). 5-in. W. & W. Iron Sheave Pulley. Wt. $4\frac{1}{2}$ lbs. List, 40 cents each.

Fig. 379 (Banner). 5-in. W. & W. Wood Sheave Pulley. Wt. $3\frac{1}{2}$ lbs. List, 40 cents each.

Fig. 380 (Banter). 5-in. W. & W. Iron Sheave K. P. Pulley. Wt. $5\frac{1}{2}$ lbs. List, 50 cents each.

Fig. 381 (Bans). 5-in. W. & W. Wood Sheave K. P. Pulley. Wt. $4\frac{1}{2}$ lbs. List, 50 cents each.

Fig. 382 (Bumper). 6-in. W. & W. Iron Sheave K. P. Pulley. Wt. $6\frac{1}{2}$ lbs. List, 60 cents each.

Fig. 383 (Bump). 6-in. W. & W. Wood Sheave K. P. Pulley. Wt. $5\frac{1}{2}$ lbs. List, 60 cents each.

These pulleys have all a very heavy cast metal frame. They are bored out, and run true on half-inch steel pins. They have an oil hole bored in the hubs. The frame comes well down on the sheave and the sheave fits into a groove in the frame, making it impossible for the rope to get between the frame and the sheave.

These pulleys, when fitted with the side piece, as shown in Figs. 382 and 383, are supplied for use as Floor Pulleys.

4-In. ECONOMY PULLEY

(Fig. 376.)



This size pulley can be used with any size rope up to 1 in., and is a handy pulley for many purposes. The 5-in. and 6-in. pulleys are the sizes generally used for Hay Carrier work. Owing to the high price of rope, a good deal more attention is now being paid to pulleys than formerly. A pulley must be made so that it will not injure the rope, and so that there is no possibility of the rope getting between the sheave and the frame.

For price see Fig. 376 above

between the sheave and the frame.

But it is also desirable that the pulleys be as large as possible.

Fig. 385 shows the W. & W. 8-in. pulley. It does not put as sharp a bend in the rope as smaller pulleys. The use of such a large pulley will do much to preserve a good draft rope, and means a much easier draft.



Fig. 385 (Bonded) W. & W. 8 inch Iron Sheave, Knot passing pulley.

List each \$1.20

Fig. 385 (Bond) W. & W. 8 inch Wood Sheave Knot, passing pulley.

List each \$1.20

Weight, 10 lbs.

Gable Block Pulley

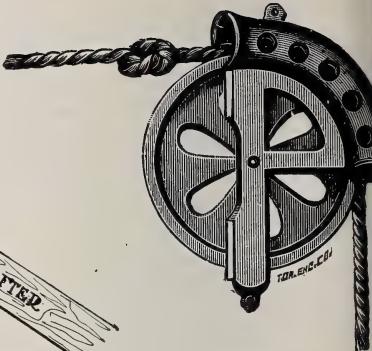
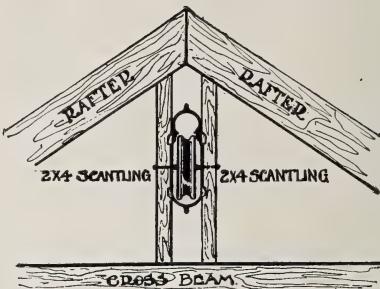
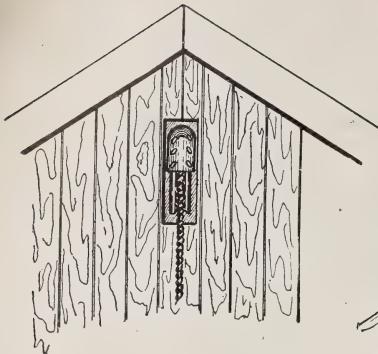


Fig. 386 (Bar)
Gable block pulley
10 in. sheave
List, \$2.00 each
Weight 16 lbs.

This pulley has a 10-in. sheave, and is used at the gable end of the barn for Hay Carrier work. By means of two 2-in. by 4-in. scantling, it is handily attached at the end of the barn in a substantial manner, and does much to lighten the draft and prevent wear on the draft rope. The frame protects the sheave in such a manner that the rope cannot get off the sheave.

The two small drawings above give views of the installation of this pulley, both from inside and from outside the barn.

The "BT" Pulley Hoister

The "BT" Malleable Pulley Hoister illustrated in Fig. 46 saves all climbing in changing from one end of the barn to the other. A small rope is attached to the hoister and placed over the draft hook at the end of the barn. The pulley is hooked on the lower part of the hoister casting, and by drawing on the small rope the upper part of the hoister is hooked over the draft hook, saving climbing up to hook on the pulley. By drawing on the rope on the other side of the hoister the pulley can be brought down again. One hoister is required for each end of the barn.

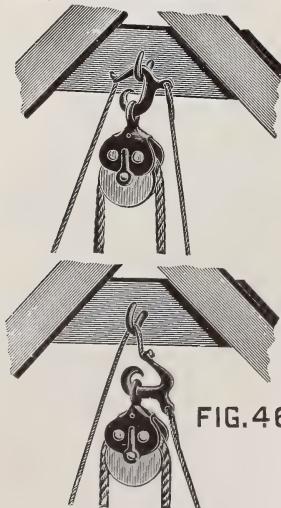
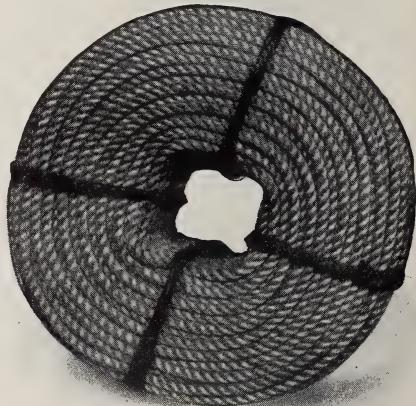


FIG. 46

Fig. 46 (Adieu)
List, 30c.
Weight 4 ozs.



We carry in stock and supply the different sizes of rope necessary for hay fork work. We have our rope made specially of the very best long fibre Manilla. The best only should be used on hay track outfits. We recommend $\frac{7}{8}$ in. rope for draft rope, $\frac{3}{8}$ in. trip rope, and 3-16 in. for pulley hoister rope. Kindly apply for prices.

The "BT" Hay Track Fittings

The "BT" End Lift Bracket is used to hold the pulley when it is necessary to drop the rope from the gable at the end of the barn. It holds the pulley out so that the rope will not rub.

It is much better than the old style gable pulley as the pulley for the rope below may be placed either directly below the gable pulley or any distance to either side as the pulley in the end lift bracket is free to swing to either side so that it will align no matter where the pulley below is placed. With the old gable pulleys it was necessary always to place the ground pulley directly below the gable pulley.

It is always best in end lift outfits to drop the draught rope at the opposite end of the barn to the unloading one. By this method one pulley and much rope is saved and as the draught rope makes fewer bends one-third less power is required to raise the loads.



Fig. 117 (Ambush)
List, \$1.20
Weight 5 lbs.



Fig. 48 (Amiss)
List, \$2.00
Weight 4 lbs.

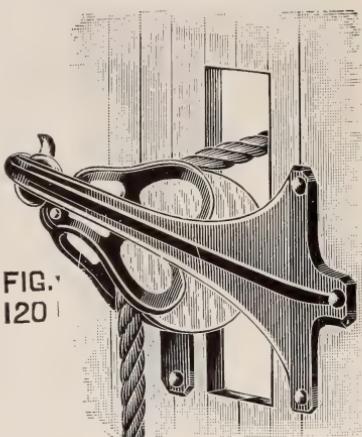


FIG.
120

Fig. 120 (Adduce)
List, 80c. Weight 3 lbs.

Fig. 117 shows the "BT" Rafter Grapple used to attach a pulley to a rafter. It is made of the **best machinery steel**, $\frac{3}{8}$ in x $1\frac{1}{8}$ in., and is strongly riveted together. The Chain has long electrically welded steel links of special design. These are useful in rope pulley outfits, especially where it is often necessary to change the position of the pulleys from one part of the barn to another

We supply them, when desired, with a **Loop** riveted to one side so that they may be placed where required with a long pole.

Fig. 48 shows a light substantial **Grab Hook** made of $1\frac{1}{4}$ in x 5-16 in. **best quality steel** which we build for use in erecting horse fork outfits. It can be attached to any rafter by means of a long pole and has rings in its lower ends to put a rope through to support a scaffold or to draw up a load.

To attach it to a **Rafter**, by means of the loop it can be handled with a long pole. Open it wide, run a long rope through the rings and reach out from ladder or beam to the spot where you wish to attach it, when a pull on the double rope will close it securely on the rafter.

BT Hay Track Fittings

Fig. 75

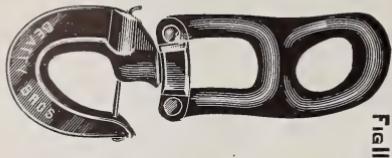


Fig. 118. (Alas)
Weight 2 lbs. List **40c.**



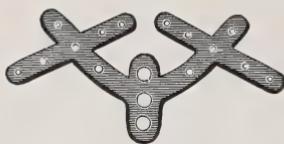
Fig. 119

The "BT" Rope Hitch (Fig. 118 and 119) is strongly made of malleable iron. It has a swivel hook and a wire may be put through the hook to keep it from unhooking off. It takes the twist out of the rope. The rope can be instantly lengthened or shortened. There are no hard knots to untie.

Fig. 75 shows the "BT" Wood Track Hanger. Our Hanger Hooks for Wood Track are made of $\frac{1}{2}$ -inch iron, and we carry them in the following lengths: 10, 12 and 14 inches; but we can make them any special length on order.

Fig. 50 illustrates our Standard Rafter Bracket. It is used with our Steel or Wood Track outfits. It is made of soft malleable iron, and can be bent to the shape of the rafter. It has three holes for the hanger to adjust the height of the track.

Fig. 51 shows our V Rafter Bracket made of malleable iron.



RAFTER BRACKET
Fig. 50. (Crack)
List **10c.**



Fig. 226. (Cattle)
List **10c.**



Fig. 227. (Candle)
List **10c.**

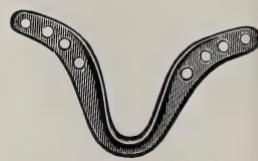


Fig. 51. (Cricket)
List **8c.**



Fig. 62. (Adult) Fig. 49 (Adorn)
List **25c.** List **15c.**
Weight $1\frac{1}{2}$ lbs. Weight $1\frac{1}{4}$ lbs.

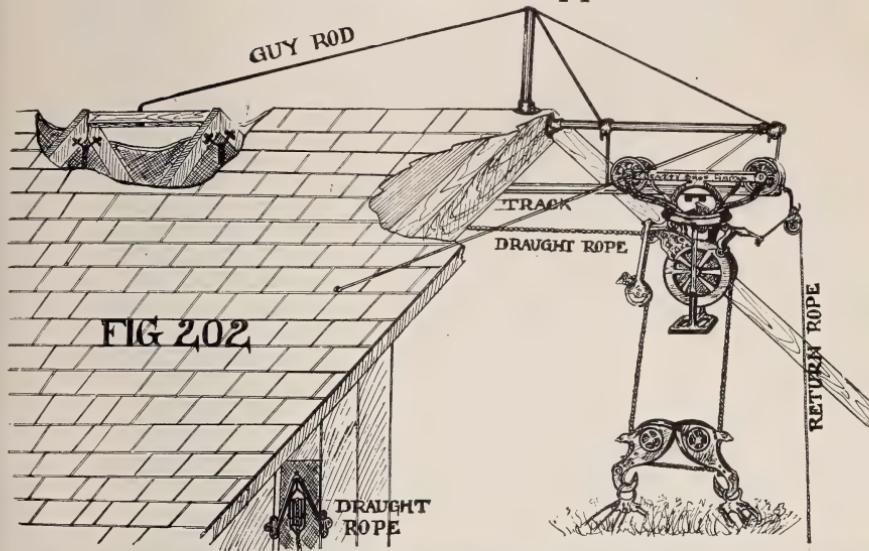
Fig. 226 shows the "BT" Side Rafter Bracket used for hanging track to the side of roof.

Fig. 227 is the "BT" Ridge Pole Bracket used when the track is hung parallel to a joist or 2-inch timber.

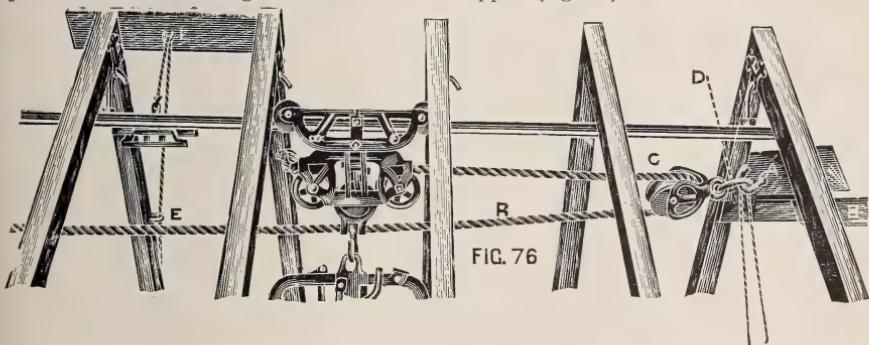
Fig. 62 illustrates the "BT" $\frac{3}{8}$ -inch Floor Hook. Fig. 49 illustrates the "BT" $\frac{3}{4}$ -inch Floor Hook. They have deeply cut sharp threads which hold firmly and are carefully made and designed to have the maximum strength.

About 5 Rafter Backets weigh one pound.

The BT Gable Support

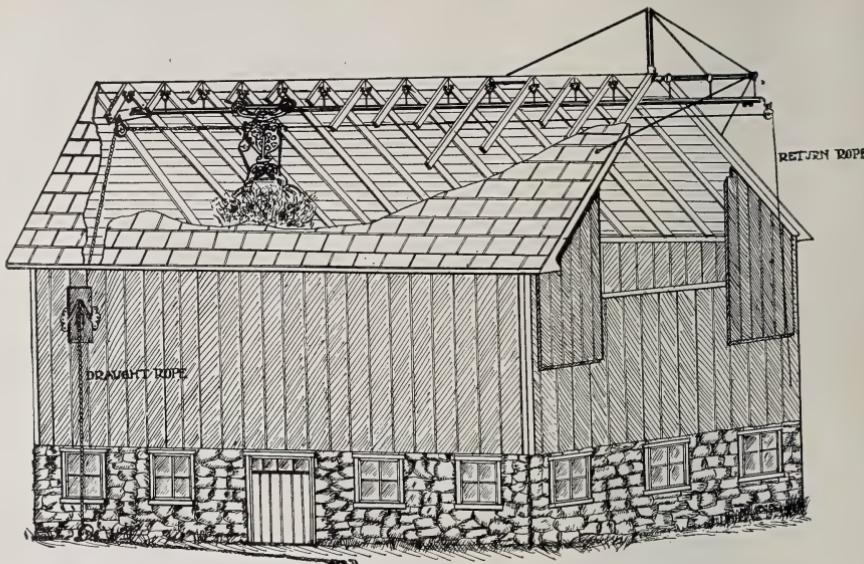


When it is necessary to unload at the gable the track should be extended out about four feet and strongly supported since the greatest strain is always at the point where the load is lifted. Fig. 202 shows the "BT" Gable Support which can be used with any style of track. The guy rod is made of $\frac{1}{2}$ -inch iron and runs over a piece of 2 in. tubing about 30 in. high, which is in turn attached to the ridge by an extra strong malleable clamp. The guy rod supports another piece of 2 in. tubing to which the track is attached. This piece of tubing is four feet long and is clamped to the front of the building. The illustration also shows how the return rope is attached for sling carriers. Price of Support (Aghast) List \$4.00.

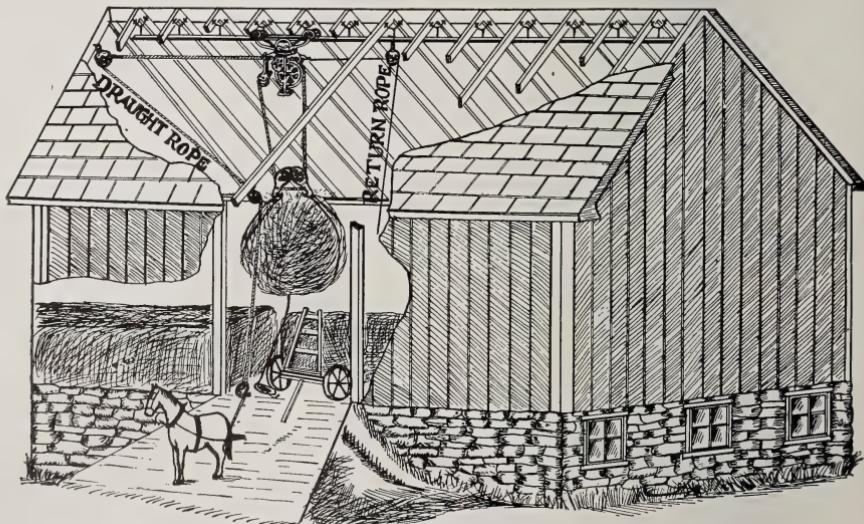


1. Every Steel or Wood Track should be firmly attached to every pair of rafters.
2. The Track in each case must be hung as straight and level as possible. Wood tracks should be built of maple and pine scantling spliced and must be dressed square on all sides to a size not less than $3\frac{3}{4}$ inches or more than $3\frac{7}{8}$ inches square.
3. Every steel or wood track should reach from the first of rafters in from one end of the barn to the corresponding pair at the other end.
4. A Heavy Collar Tie (A) placed behind the rafters, as in Fig. 76, should be used to carry the Draft Hook and should be loosely supported at its ends by tough inch boards B. B. well nailed at the correct height to these rafters and also to the ones at the end of the barn.
5. A Brace (C) should be nailed in between the rafters, as shown to distribute the inward strain.
6. Fig. 76 shows (at D) how a Hoister is used.
7. Fig. 76 also shows how the Gate Cord is attached to a "BT" raise and lower Stop and held out of the way by staples or screw eyes E. E.
8. Use $\frac{7}{8}$ inch Pure Manilla Draught Rope with Fork Cars, and with Sling Cars even larger.

Installation of "BT" Hay Track Outfits



The illustration above shows the correct method of installing a Haytrack outfit for an End-lift Barn. The pulley for the Draught Rope is placed one rafter in from the end opposite to the gable door, and the pulley for return rope is hooked on to the end of the gable support. The Draught rope should run through the pulley at end of barn, over an end lift bracket, from there to a floor pulley below. Particulars of track and Hangers for Gable doors are given on page 154.



Above is shown the proper method of installing a Hay Track outfit in a barn with side drive. The end blocks should be placed one pair or rafters in from each end, and the track, of course, stopped at same.

The pulleys for draught rope are placed on the end pair of rafters. The return rope pulley is suspended over track with a pulley bracket, on the opposite side of the driveway to mow in which unloading is being done.

Take no Outfit but the "BT"

Directions For Ordering.

1. In ordering steel or wood track, hay carrier outfits, always specify one hanger and one rafter bracket for each pair of rafters, unless the rafters are closer than two feet apart, in which case one pulley for two pair of rafters will do.
2. When ordering steel track for a barn, order four feet more track than length of the barn if it is an end lift, and if it is a centre drive order four feet less.
3. Always use as large pulleys as possible as they are easier on the rope and decrease the draft and always use a short rope as will do the work for the same reason.
4. Always use best Manilla rope. It is more flexible than Sisal rope and will wear three times as long. For use with a fork ear $\frac{7}{8}$ in. rope is the largest that should be used. Where centre trip slings and sling cars are used 15-16 in. rope will give the best service.
5. Whenever practical drop the rope to the ground and draw it from the opposite end of the barn to where the unloading is done. If this method is used it will take less rope.
6. For an end lift barn the following goods are required. One gable support, one hay car, one horse fork, three pulleys, one end lift bracket, two floor hooks, one rope hitch and a sufficient quantity of draft rope, trip rope and return rope. Order four feet more track than length of barn, and one hanger and one rafter bracket for each pair of rafters, which should not be more than three feet apart.
7. For a centre drive barn the following goods are required: One car, one horse fork, four pulleys, two pulley hoisters, 6 floor hooks, one rope hitch and 4 feet less track than the length of the barn, and a sufficient quantity of draft rope, trip rope, return rope and hoister rope. One hanger and one rafter bracket for each pair of rafters, which should not be further than 3 ft. apart.
8. Where slings are to be used a set of slings should be purchased for each waggon that will be used for drawing-in. Sling cars should always be used with slings, but in case a fork ear is to be used with slings a set of interlocking pulleys must always be added if the slings are centre trip. With a set of long end trip slings, it is necessary to use end trip interlocking pulleys.
9. When slings are ordered a fork may or may not be ordered as well if desired. Where sling cars are used a return rope about the same size as trip rope should be used. For best sizes of rope for different purposes, see page 108.
10. On page 112 will be found drawings illustrating the method of installing hay carrier outfits in end lift and centre drive barns respectively.

A Hay or sling outfit has the very hardest and fastest kind of work to do at the very season of the year when time is most precious. One break or failure in a poor tool causes the loss of many dollars. BT HAY TOOLS WILL STAND THE STRAIN.

The Daisy Churn



Fig. 364

For prices and table of capacities of the Daisy Churns see next page.

The popularity of the Daisy Churn with the farmers is shown by the fact that over 175,000 of these churning machines have already been sold. When Mr. Wortman originated the idea of a barrel churning machine, he cut in two the work of butter-making, and did more than anyone else to better the quality of Canadian butter.

The frame is made of 1 by 3-16 flat steel strongly riveted together, and is so constructed that the legs are not in the way of the operator. The legs can be handily adjusted to rest evenly on the floor.

The Barrel is made of the best, seasoned oak, and all the barrels are hand-made, to insure an even thickness of the stave from top to bottom. The lid is so constructed that it will only fit on one way, which prevents wearing of the cork. The barrel turns on bicycle ball bearings.

The Daisy Churn is fitted with a cream-breaker, which greatly hastens the operation of churning. The cream-breaker can be released and taken out in an instant. All iron parts in the Daisy Churn that come in contact with the cream are galvanized in our galvanizing plant.

The Bow Lever on our churn allows the power to be applied equally to both sides and prevents the churn creeping in a circle as it is being worked.

The finish has much to do with the selling of any article. The Daisy Churn is handsomely varnished, bringing out the splendid quality of oak used in the barrel.

The Daisy Churns Nos. 0, 1, 2 and 3 can all be fitted with power pulleys, for use with gasoline engines. The pulleys are illustrated in Fig. 365. They are $7\frac{1}{4}$ inches in diameter and have a $1\frac{3}{4}$ -inch face. A loose, as well as a tight, pulley is supplied.

The Daisy Power Churn



Fig. 365

On almost every farm to-day there is a gasoline engine. Every farmer who owns a gasoline engine should have a Daisy Power Churn. A very small engine will run it. About $\frac{1}{4}$ horsepower is all that is needed, and the work is done far better and quicker than by hand.

We can supply power attachments for any sized churn. The cut above shows one of our power churning of large capacity. The drive pulley is 12 inches in diameter, and has a 2-inch face. A loose, as well as a tight, pulley is supplied.

The frame is very substantial. It is fitted with steel roller bearings, which run in accurately bored boxes, and insure ease of operation.

The axles are heavy and strong. Each churn is specially fitted, so that all parts are absolutely correct before leaving the factory.

The capacity of the Daisy Power Churn is from 1 to 16 gallons, and it will churn equally well any quantity of cream within these limits:—

SIZES OF DAISY CHURNS

No. 0.....	Capacity 7 gallons.	Churns 1 to 3 gallons.	Weights 50 lbs.	List \$ 9.00	(Bullet)
" 1.... "	9 "	" 1 " 4 "	" 55 "	" 9.00	(Bully)
" 2.... "	15 "	" 1 " 7 "	" 60 "	" 10.00	(Bug)
" 3.... "	20 "	" 1 " 9 "	" 70 "	" 11.00	(Buggy)
" 4.... "	25 "	" 1 " 12 "	" 85 "	" 13.00	(Bugle)
" 5.... "	35 "	" 1 " 16 "	" 100 "	" 16.00	(Build)

The power churn shown above weighs 118 lbs.

Pulleys only, for power churning.	Sizes 0 to 3.	Weights 4 lbs.	List \$ 4.50	(Acrid)
Heavy Stand and Pulleys,	4 & 5.	18 ..	6.00



Fig. 366



Fig. 490

Power attachment for Daisy Churns, sizes 0 to 3.
List, \$4.50 Code (Acrid) Weight 4 lbs.
For prices of the churning themselves see page 115.

When desired, we supply the Daisy Churn with side lever, as shown in Fig. 366. In other respects, it is the same as the Churn shown on page 114. Prices and weights are the same.

The sale in foreign countries of the B.T. Churns is increasing at a rapid rate. B.T. Churns are now sold in practically every country in which Dairying is done.

Fig. 479 illustrates the No. 3 Daisy Churn fitted with power attachment so that it may be used with a gasoline engine.

Churns Nos. 4 and 5 are fitted with a heavy power frame, but for the smaller sizes, an attachment is supplied, consisting of a tight and a loose pulley and an extra long trunion to carry the same.

If the ordinary fittings, consisting of the bail, the foot pedal, and two castings, are not required as well as the power attachment, kindly say so in ordering. If the ordinary fittings are not supplied, the churn will, of course, come cheaper.

The pulleys are $7\frac{1}{4}$ inches in diameter and have $1\frac{3}{4}$ inch face.

Butter Worker

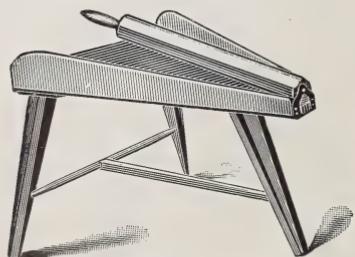


Fig. 367

The Butter Worker is a great aid to good butter making. It will work a batch of butter thoroughly in from 3 to 5 minutes, taking out all the butter-milk and working in the salt. It is much easier and quicker than working with bowl and paddle and much more efficient.

Made of best Hard Maple, with galvanized end castings.

Made in three sizes

	Capacity	Weight	Price
No. 0.....	15 lbs.	16 lbs.	\$6.00
No. 1.....	25 lbs.	24 lbs.	7.00
No. 2.....	40 lbs.	34 lbs.	8.50

Butter Shipping Box

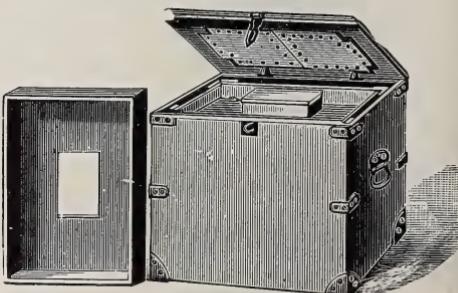


Fig. 368

Our Butter Shipping Box overcomes all difficulties of marketing the butter. It is fitted with a water-tight ice box, which, when partly filled with ice, keeps the butter firm in the hottest weather. The box contains several tiers of shelves, properly arranged for holding the butter.

Made in four sizes

	Capacity	Price
No. 0.....	30 lbs.	\$4.50
No. 1.....	40 lbs.	5.00
No. 2.....	56 lbs.	6.00
No. 3.....	80 lbs.	8.00

The Ideal Washer



Fig. 369 (Pall)

List \$12.00 each. Weight, crated, 80 lbs.

If you want an easy-running washer, get the Ideal.

This machine washes the clothes by means of a reversing dolly. When you turn the crank the dolly makes a complete revolution to the right, and then a complete revolution to the left, bringing the clothes rapidly in contact with the sides and bottom of the washer.

The dolly has freedom to move up and down on the central spindle, adjusting itself to the quantity of clothes in the tub. The sides and bottom of the washer are corrugated, so that the clothes are forced over a complete wash-board surface.

Note the large balance wheel. This, with the roller bearings and steel shafting of the machine, insures an easy action.

The Ideal Washer

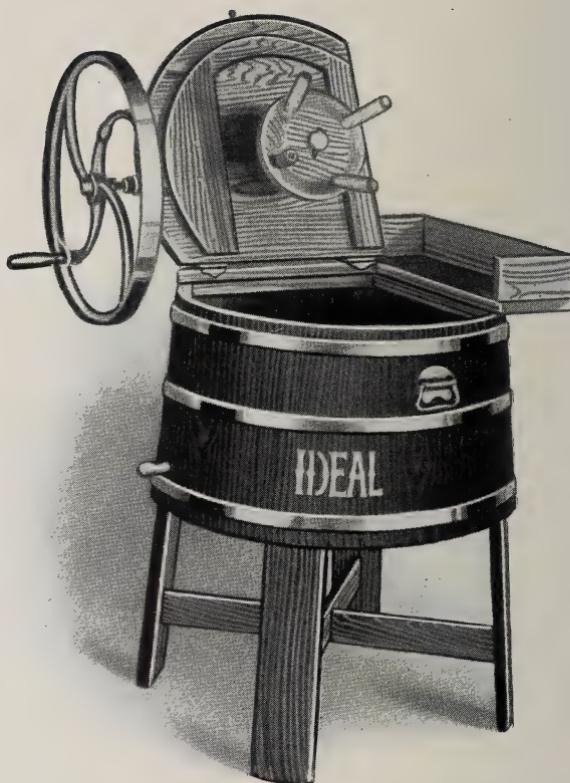


Fig. 370

The tub of the Ideal Washer is made of Cypress lumber. This is the best material for washers, as it will never shrink or warp. The washer is handsomely varnished.

The legs are made of hard maple. They are bolted to the sides of the tub and firmly braced.

The Ideal is also a splendid type of washer for the reason that the lid and dolly can be thrown back out of the way, and the washer used as an ordinary tub.

The wringer can be attached to the washer in such a way that it does not interfere with the raising and lowering of the lid, and can be left on throughout the entire washing.

The Cyclone Washer



Fig. 371 (Pair)

List **\$12.00** each. Weight, crated, 68 lbs.

If you want a machine that will wash quickly, get a Cyclone Washer.

This is a rubber board washer. When the machine is being operated a heavy pressure can be put on the dasher, so that the bars on the dasher give the clothes a thorough rubbing, and bring them rapidly in contact with the corrugated bottom and sides of the tub.

The springs on the lid force the dasher down upon the clothes. By putting on additional pressure, you can wash as rapidly as desired.

The springs also serve to do away with any jar as the handle of the washer is being reversed.

The Cyclone Washer

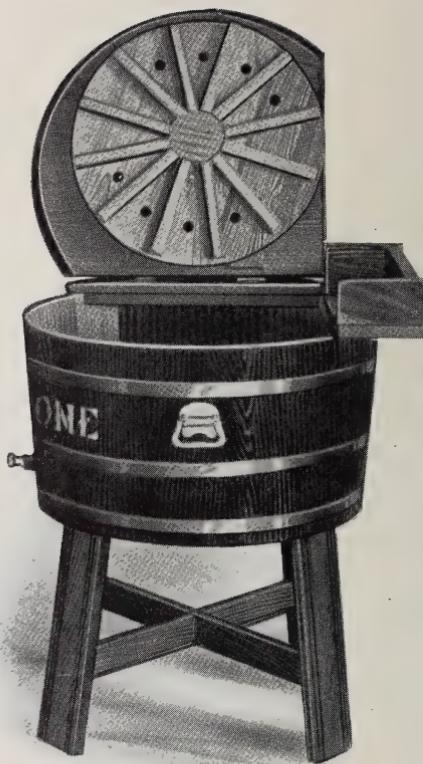


Fig. 372

The tub of the Cyclone Washer is made of the best Cypress lumber and is handsomely finished. The legs are maple. They are bolted to the sides and are securely braced.

The wringer can be attached to the washer so as to be entirely free of the lid. When the lid is thrown open it allows all drippings to flow into the tub.

Note the exceptionally large capacity of the tub. This feature, together with the thoroughness with which the Cyclone Washer does its work, make it the very best machine to use where there are a lot of big heavy washings.

The Vollmar Washer



Fig. 373

For prices and weights see next page.

This, we believe, is the best washer made, and the easiest on the clothes. The principle of the machine is combined pressure and rubbing. The clothes are placed between two corrugated rubbing boards, which squeeze them together, and at the same time one of the boards moves downward and the other upward when the lever is being operated.

At each end of the rubbing board there is a coil spring, which adjusts the rubbing boards to all unevenness of the clothes and does away with all jar and stiffness as the lever is being worked backward and forward. All castings that come in contact with the water are galvanized to prevent rusting.

The action of the Vollmar Washer is substantially that of hand washing. The movement turns the clothes over and over again, thereby thoroughly cleansing them. The Vollmar will wash wristbands, collars and every portion of the garment with comparatively little labor, and without injury to the finest fabrics.

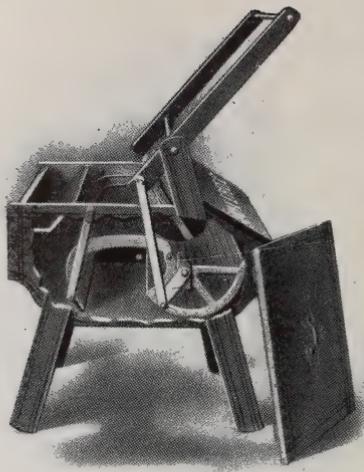


Fig. 374

Fig. 374 is an interior view of the Vollmar Washer. We have this machine patented. There is no other like it on the market. The dealer securing the contract for this washer can build up a very profitable trade.

The Vollmar is made in two sizes:—

Size 2, crated, weighs 70 lbs.

List, \$12.00. (Paper).

Size 3, crated, weighs 75 lbs.

List, \$13.00. (Parcel).

The Bonnie Washer

Every one is familiar with this style of washer. The under side of the dasher and the bottom of the washer are deeply corrugated, and the clothes are cleaned by being thoroughly rubbed between these.

A heavy spring forces the dasher down on the clothes, so that all the operator needs to do is to move the lever backward and forward. This motion is a very easy one.

The Bonnie Washer is made in two styles. Style B is furnished with a basket rack and Style A without it.



Fig. 375

Style A, crated, weighs 65 lbs. List, \$8.50. (Pace).
Style B, crated, weighs 68 lbs. List, \$9.00. (Pad).

The Favorite Clothes Wringer



Guaranteed 5 years in family use.

Size of Rolls, 11 x 1 3/4.

Enclosed Cogs prevent accident and keep the oil and grease from the rolls and the clothes.

Fig. 505. List, \$8.20. Code (Bleed). Weight, 16 lbs.
Wringers are usually crated in lots of three.

On this and the following page we illustrate a line of Clothes Wringers guaranteed to give good service for a definite time. The Favorite is guaranteed for 5 years, the Challenge for three and the Royal Canadian for one year.

The rolls are the most important part of the wringer, and must be pliable and elastic, and give to the unevenness of the clothes. If they are not, only the thick part of the clothes going through the wringer will be dried, and the edges of the clothes will remain wet.

Cheap Rolls are hard and will not wring dry; also they will break the buttons and in no way are they satisfactory, as they do not last more than a year or so, while a good wringer will give satisfactory service for ten to fifteen years.

The Rolls in the "Lifebuoy" Brand Wringers are made of the best rubber stock, solid rubber from outside of roll to the shaft, and vulcanized onto the shaft.

One Lifebuoy Wringer giving continuous service for, say, twelve years, multiplied by 50 wash days in the year, makes 600 wash days. At the price charged for our best wringer, this works out at about one cent per week for satisfactory service. It is not worth while to attempt another washing without a Lifebuoy Brand Clothes Wringer. They save—Time, Health and Clothes.

The Challenge Clothes Wringer



Fig. 506. List, \$7.20. Code, Blend. Weight, 16 lbs.

Guaranteed 3 years in family use. Size of Rolls, 11 x 1 3/4.

Enclosed Cogs prevent accident and keep the oil and grease from the rolls and the clothes.

The Royal Canadian Clothes Wringer

Guaranteed 1 year in family use.

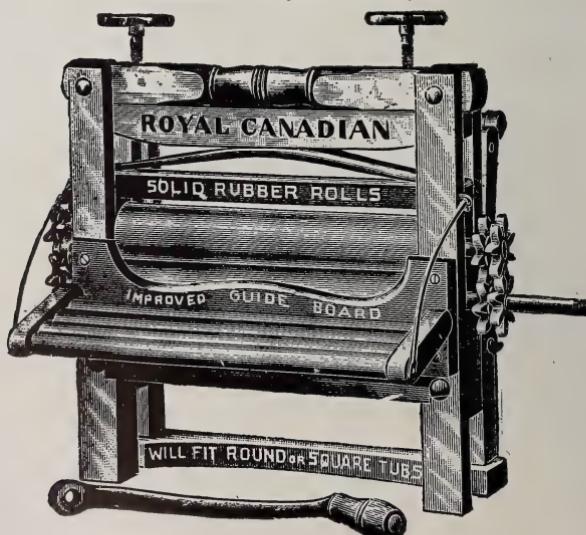


Fig. 507. List, \$6.36. Code, Bless. Weight, 16 lbs.

Size of Rolls, 11 x 1 3/4.

Quick Clamp Fastener.



The Ideal Power Washer

The working parts of this machine are just the same as those on our Ideal Washer for hand use, described on Pages 117 and 118.

The same remarks as to finish and material apply. Fig. 494 has a drive pulley 13 inches in diameter, with 2-inch face and extra long trunion to carry same. Can be used with gas, gasoline, steam engine, electric or windmill power.

Fig. 494 (Pipe)

List, \$14.00

Weight complete 78 lbs., crated.

Weight of power pulley only, 11 lbs.

The Ideal Water Motor Washer

Working parts inside the tub same as our Ideal Washer.

This machine is fitted with a very strong, easy working water-motor. The motor has no parts to rust, being constructed entirely of brass. It has been specially designed so as to overcome all difficulty caused by sand or gravel in the water.

Any washing machine will save an enormous amount of hard work. This washer, however, cuts the work down to an absolute minimum. Just attach the upper pipe to the tap and let the lower run back to the sink, then turn on the water.



Fig. 494 (Pique)

List, \$24.00

The BT Ladders

The best ladder is so inexpensive to buy, and so useful in a hundred different ways, that it does not pay to buy a poor, flimsy thing. For the sake of a few cents, it is not worth risking one's life on an insufficiently braced ladder made of poor material.

The following pages contain particulars of B.T. Ladders to suit all conditions. A ladder is an article that no home can afford to be without.

THE USES OF A LADDER. The B.T. Step Ladders can be used for painting, paperhanging, putting up or taking down storm windows, fruit picking, cleaning or hanging pictures, and wiring. One of these around the home will prevent the tables from getting scratched, the cushions from being soiled and the chairs from being broken. A ladder is the proper thing to use for the above purposes, but when one is not around, other articles of furniture, not intended by any means for the purpose, are apt to be used. B.T. Ladders are light and yet perfectly strong, and are designed to meet every possible requirement of safety and convenience.

The B.T. Extension Ladder cannot be excelled by any other on the market, for such purposes as erecting hay fork outfits, eave-troughing, reaching upper windows, getting up to roofs, putting out fires, etc. Pages 134 and 135 describe the B.T. Extension Ladder in detail. We would particularly direct your attention to the method by which the risers are braced and the splendid Sure-acting Lock.

We have designed ladders specially for such purposes as fire and window cleaning, and are prepared to design ladders to meet any particular conditions. We carry at all times, a heavy stock of the very best material, and so are well prepared to take charge of any orders.

We make extra heavy special ladders for the use of Fire-brigades, which we guarantee to carry two firemen with a line of hose. These ladders are finished either in oil or two heavy coats of lead paint. The longer lengths are supplied with legs to brace the ladder.

B.T. Single Ladders are built of the very best stock, and are invaluable in garden, store and factory.

B.T. Ladders sell in rapidly increasing numbers every month. There is a demand for them every month of the year, and their popularity is the greatest proof of their merit. Any customers of yours who buy B.T. Ladders will recommend your store and BT Ladders to their friends.

The hinge at the top is made of one piece of sheet steel, and holds the risers to the top in a perfectly rigid manner.

The top is made of 20 gauge galvanized iron. This greatly strengthens the top, making it almost impossible to break and protecting it from damp. It is an exclusive feature of BT step ladders.

The Iron Brace distributes the strain evenly between the two sections.



Fig. 348

Note the wide steps. Each step is braced with steel rod. Note also the galvanized plate which binds the steps firmly to the sides.

BT Step Ladders

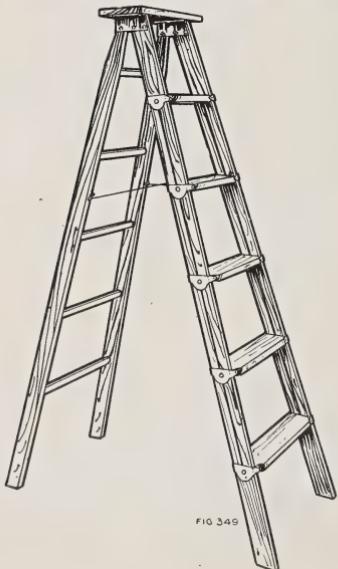
The BT Iron Bound Step Ladder, Fig. 348.

We believe this ladder has the strongest construction of any step ladder built. It is made throughout from the very best No. 1 clear stock. It has wide steps, every one of which is braced with a steel rod. The steps fit into grooves in the sides of the ladder and a galvanized plate binds the steps firmly to the sides. The hinge at the top of the ladder is made of one piece of sheet steel, which substantially attaches the risers to the heavy 20-gauge galvanized steel top and holds the ladder rigid.

We supply this ladder in any length from 4 to 20 feet.

The BT Painter's Step Ladder, Fig. 349.

The back of this ladder is supplied with rounds, so that a plank can be placed on them for making a scaffold. The rounds and steps are relatively spaced, so that a plank can be supported every six inches. In this way, the ladder is especially suited for Painters' or Decorators' work.



The B.T. Painter's Step Ladder is also splendidly adapted for use in factory, store or warehouse, the rounds at the back permitting two men to use it at the same time.

The construction and material used in this ladder are the same as we use in our Iron-bound Step Ladder. The illustration shows the ladder with a rope lock. This is the way it is generally shipped, but, when it is desired, we will supply it with rigid lock, the same as shown on the Iron-bound.

All our Step Ladders over 10 ft. in length are made of extra heavy stock, and the brace rods supporting the steps are secured with patent malleable iron washers.

Our stock of ladders is not limited to the styles shown in this catalogue. We build every style of ladder that you may need, including Roof Ladders and Fire Ladders of all kinds.

BT STEP LADDERS

4 to 9 feet Iron Bound Step Ladder	List, 50c per foot (Laud)
10 to 14 feet Iron Bound Step Ladder	List, 60c per foot (Laud)
15 to 16 feet Iron Bound Step Ladder	List, 80c per foot (Laud)
17 to 20 feet Iron Bound Step Ladder	List, \$1.00 per foot (Laud)

Weight—In lengths from 4 to 9 feet, 4 lbs. per foot. In lengths from 10 to 20 feet, 5 lbs. per foot.

The prices on Painter's Step Ladders are the same as those for Iron Bound Step Ladders. Code (Lance).

BT Extension Ladders

Fig. 347 shows the B.T. Extension Ladder.

The sides of this ladder are made of first-grade Southern pine. They are trussed with 3-16 inch galvanized steel wires, so that, when in use, the wires take the strain, and the ladder will carry twice as much weight as a ladder without the truss wires.

These truss wires are made especially for use on the B.T. Ladders. They are of a high carbon steel that will stand a strain of over 3,000 lbs. They run the full length of each side, and are held firmly in place in a groove. They are threaded, and are secured at the ends of the ladder by a washer and nut.

The lock on the B.T. Ladder is self-operating. That is, it locks automatically on any round as it is being drawn up, but when it is being let down, it will not engage with the rounds. The rounds are made of the best clear stock. The lifting rope is of best Manilla.

BT FRUIT-PICKING EXTENSION LADDER, FIG. 362.

This ladder is constructed on the same principle as the B.T. Extension Ladder, with trussed sides. The top section is provided with a three-foot pole, firmly secured to the top round, and to both sides. This splendid feature makes the ladder exceptionally handy and secure for use around fruit trees. The best stock throughout is used in these ladders.

LENGTHS OF B.T. EXTENSION LADDERS.

B.T. Extension Ladders are made in two sections from 20 to 48 feet, and in three sections from 52 to 60 feet.

B.T. SINGLE LADDERS.

We make these with trussed sides in all lengths up to 24 feet. The risers of the larger lengths of extension ladders are spread at the bottom, and we will ship the shorter lengths with the risers spread, if specially ordered. All ladders are unpainted, so that the stock used can be seen. When it is desired to have them painted, an extra charge will be made.

EXTENSION LADDERS WITH ROPE

16 ft. Ladder, 30c per ft., \$4.80 each (Lash)	Weight 2 lbs. per ft.
20 ft. Ladder, 30c per ft., \$6.00 each (Lad.)	Weight 2 lbs. per ft.
24 ft. Ladder, 30c per ft., \$7.20 each (Lard.)	Weight 2 lbs. per ft.
28 ft. Ladder, 30c per ft., \$8.40 each (Lamb.)	Weight 2 lbs. per ft.
32 ft. Ladder, 34c per ft., \$10.88 each (Lake)	Weight 2½ lbs. per ft.
36 ft. Ladder, 34c per ft., \$12.24 each (Later.)	Weight 2½ lbs. per ft.
40 ft. Ladder, 40c per ft., \$16.00 each (Lamp.)	Weight 2½ lbs. per ft.
44 ft. Ladder, 40c per ft., \$17.60 each (Lark.)	Weight 2½ lbs. per ft.
48 ft. Ladder, 50c per ft., \$24.00 each (Last.)	Weight 3½ lbs. per ft.
52 ft. Ladder, 50c per ft., \$26.00 each (Larva)	Weight 3½ lbs. per ft.
56 ft. Ladder, 60c per ft., \$33.60 each (Lagoon)	Weight 3½ lbs. per ft.
60 ft. Ladder, 60c per ft., \$36.00 each (Laird.)	Weight 3½ lbs. per ft.

FIG. 347

The prices for Fruit-Picking Extension Ladders are the same as those for ordinary extension ladders of the same over all length.

Fire ladders, double price of ordinary ladders up to 32 feet in length, three times the price above 32 ft. Fire ladders above 32 ft. supplied with supporting legs.

SINGLE LADDERS

8 to 12 ft. Single Ladders, 20c per ft. (Lawn)	Weight 2 lbs. per ft.
14 to 18 ft. Single Ladders, 22c per ft. (Lawn)	Weight 2 lbs. per ft.
20 to 24 ft. Single Ladders, 24c per ft. (Lawn)	Weight 2 lbs. per ft.

Fruit-Picking Single Ladders, Fig. 358 same price as ordinary single ladders for same overall length, (Lax).

Roof Ladders with hooks same price per foot, as ordinary single ladders plus \$2.00 to cover cost of hooks, (Laurel)

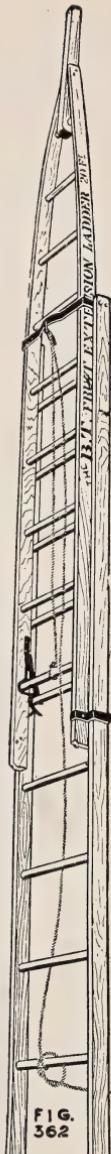


FIG.
362



Fig. 363

You Can Tighten the Truss Wires

Fig. 363 shows you how easily it is done. The truss wire is attached to a $\frac{3}{8}$ bolt. This bolt is supplied with a very long thread, and with a wrench you tighten it in a minute. This splendid feature keeps the ladder always up to its maximum strength. It is a great advantage over the other styles of ladders, on which the wires, when once they become slack, are no longer a support, for the reason that they cannot be tightened.

Stronger and Lighter than Any Other Ladder

The Southern Long Leaf Pine, used in our ladders, is the very best material obtainable for the purpose. It is tougher and far more elastic than Northern Pine or Spruce, or any of the other soft woods commonly used in Ladders. All our ladder stock is air dried, and no imperfect material is allowed to enter into the construction.

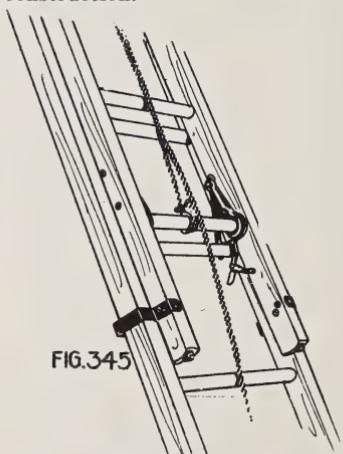


FIG.345

do in all other styles of automatic locks. The risers where it is attached being pulled off, and the risers where it is attached being splintered.

Fig. 351 above shows the lock when the ladder is being raised. There is a spring at the foot of the lock which throws it against each round.

Fig. 345 shows the lock in a position ready for use. Note how the lock throws the strain from the round on the top section to the rounds on the lower section.

Fig. 346 shows the position of the lock as the ladder is descending. Note the little dog at the back of the lock that holds the lock out so that it will not engage with the rounds while descending.

A very important feature of the B.T. lock is that it operates on the very foot of the top ladder section, instead of one round up; so that the ladder, when extended out, only has to have a lap of one foot, instead of two feet or more.

The guide irons are heavier than on any other ladder. They are held in place by two rivets and a bolt.

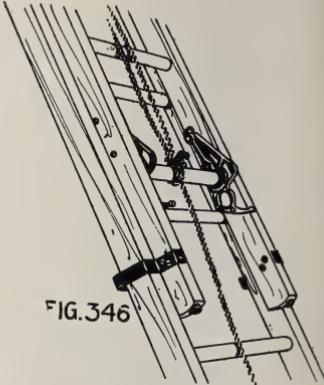


FIG.346

The use of the Truss wires enables us to cut in two the weight of material required for our ladders. Our ladders are from one to two pounds lighter per foot than other makes without the truss wires. They will easily sustain a weight of half a ton.

The Lock Works Right

The Lock on the B.T. Extension Ladder is heavily made of malleable iron, and will stand any strain that the ladder is capable of sustaining. As the ladder is going up, the lock will engage with any round; but, when descending, it will automatically miss them. A second rope is not necessary to operate the lock.

The strong point in this lock is the way the weight of the top ladder section is carried from its rounds to the rounds of the lower section. The bolts attaching the lock to the risers of the ladder do not have to carry the load as they

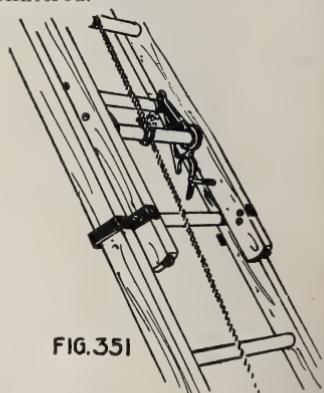


FIG.351

The BT Combination Ladder

Fig. 486 illustrates a new style of ladder that we have just placed on the market, and which is proving very popular. Like the fruit picking ladders, shown on page 132, Figs. 352 and 353, this ladder is adapted either for use as a single ladder (Fig. 487) or step ladder (Fig. 486).

The sides are made of best Southern Pine, strongly trussed with 3-16 inch wire. The treads in the lower section are made of 1 inch material, 3 1-2 inch wide and are braced with 3-16 inch wire.

The base of the ladder has a wide flare, which insures a firm stand and even balance.

This ladder can also be used as a painter's step ladder. The rungs on the upper section are proportionately spaced, thus making this ladder very convenient for holding scaffolding. Two persons can work on it at the same time.

The iron brace distributes the strain evenly between the two sections, and the wide flared bottom makes this ladder very rigid and secure.

Considering the fact that this is really three ladders in one, and is sold at the price of an ordinary step ladder, we think that it is evident that it will pay any dealer well to carry the ladder in stock.

SIZES AND PRICES

Figs. 486 and 487

4 to 9 ft. Combination Ladder List, **58c** per ft.
Code (Lass)

10 to 14 ft. Combination Ladder List, **68c** per ft.
Code (Lass)

15 to 16 ft. Combination Ladder List, **88c** per ft.
Code (Lass)

17 to 20 ft. Combination Ladder List, **\$1.08** per ft.
Code (Lass)

Weight—Lengths from 4 to 9 ft., 4 lbs. per ft.
Lengths from 10 to 20 ft., 5 lbs. per ft.

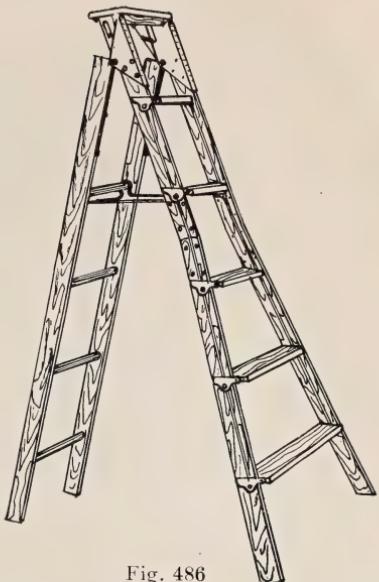


Fig. 486



Fig. 487

The Most Popular Line of Fruit-Picking Ladders Made

BT Single Fruit-Picking Ladder, Fig. 358.

This ladder is provided at one end with a three-foot pole, secured to the last round, and bolted to both sides. The pole will rest easily in the branches of the trees. This feature, together with the exceptional lightness of the ladder, secure for it the highest recommendations of the fruit growers throughout the country.

The lower steps are all strongly braced with 3-16 steel rods. The sides are made of the best Southern Pine and are trussed with 3-16 steel wire.

The base of the ladder has a wide flare, which insures a firm stand and even balance.

BT Fruit Step Ladder, Fig. 352.

The pointed portion of this ladder is provided with rounds and is hinged to the lower part in such a way that it can be extended, and the ladder used as a common single ladder, as illustrated in Fig. 353.

If desired, the pointed portion can be turned down, making a step ladder. In this form, it is particularly suited for fruit pickers' use, the three legs preventing all danger of tilting upon uneven ground. The rounds upon both parts make it possible for two persons to use the ladder at the same time.

The hinge on the B.T. Fruit Step Ladder makes it just as secure when extended as a common single ladder. This hinge consists of one piece of sheet steel, bolted to each of the lower risers. The upper portion is fastened to this on both sides by a strip of steel. To make the ladder more rigid when extended, the top part of the hinge can be locked to the lower.

We make this ladder in any length required.

Standard lengths are:—

- 6 ft. Step extended to 11 feet
- 8 ft. Step extended to 15 feet
- 10 ft. Step extended to 19 feet

The weights of B.T. Fruit-Picking Step Ladders are the same as those of Step Ladders given on page 128.

For prices of Fig. 358, see page 129.

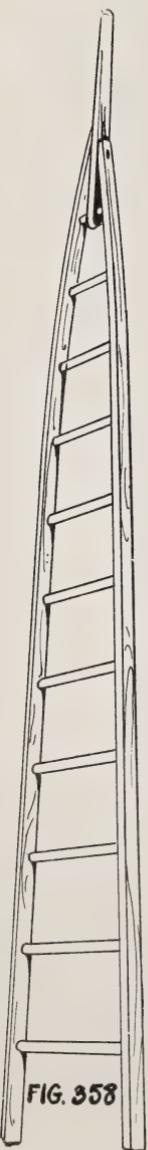


Fig. 352

	Per ft.
4 to 9 ft. List	60c
(Lane)	
10 to 14 ft. List	70c
(Lane)	
15 to 16 ft. List	90c
(Lane)	
17 to 20 ft. List	\$1.10
(Lane)	



Fig. 353

BT Hay Rack Clamps

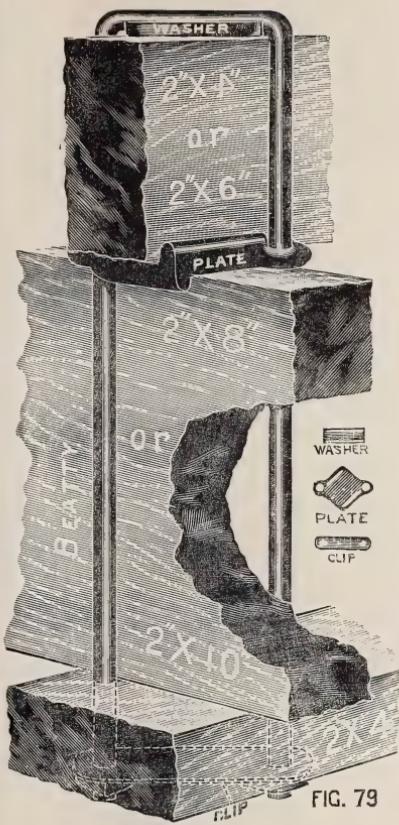


FIG. 79

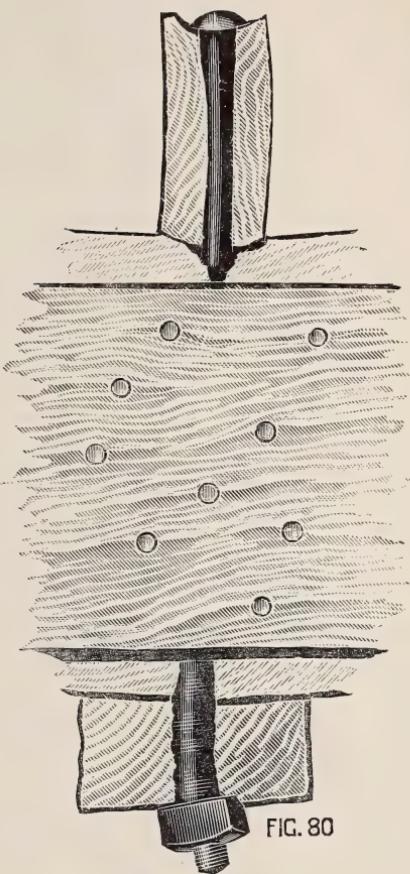


FIG. 80

A glance at Figs. 79 and 80 is sufficient to convince anyone of the superiority of B.T. Rack Clamps for Hay Rack construction. Without bolts, nails, or weakening of the rack timbers by boring holes and so wasting one-third their strength, the timbers are held securely in position and the strongest and most reliable rack possible is obtained by using these Rack Clamps.

The full strength of the timbers is retained, and all holes, which simply collect water and cause decay, are rendered unnecessary.

The time saved in building your rack with these fixtures will pay the small first cost of a set.

Fig. 81 shows a rack constructed with the B.T. Rack Clamps, and also with a simple hind wagon wheel guard.

Eight complete Clamps comprise a set, and are packed one set in a box, as shown by Fig. 82.

We supply them in four sizes, as follows:—

	Clamps	Weight per set	List	
Size No. 1.....	14 in.	14 lbs.	\$2.50 per set	(Cute)
Size No. 2.....	16 in.	17 lbs.	\$2.60 per set	(Curve)



FIG. 81



FIG. 82

BT Hay Rack Clamps

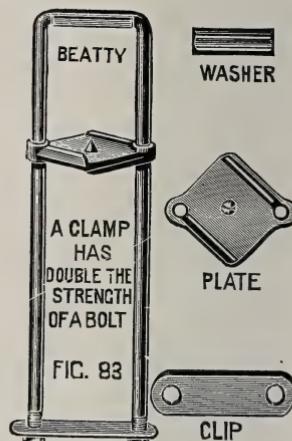
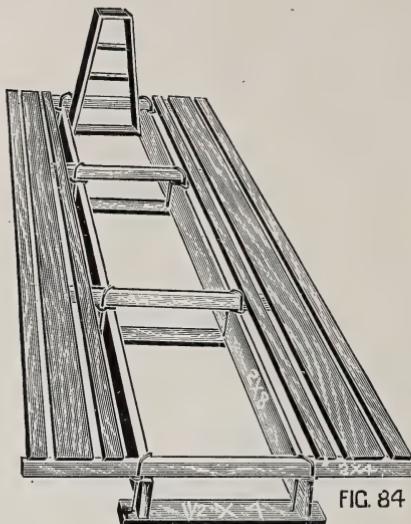


Fig. 83 shows a complete B.T. Rack Clamp and also its parts in detail.

The Main Frame or Clamp is made of round steel, and is placed astride of the timbers. It has double the strength of a bolt.

The Grooved Steel Upper Washer gives the Clamp a liberal bearing surface, so that it cannot cut into the cross piece.

The Malleable Iron Saddle or Intermediate Bracket adds much to the bearing surface of the timbers where they cross, and, with its Studs and Heavy Flanges, keeps the timbers from slipping or twisting under strain.

The Lower Steel Clip acts as a washer, and also prevents the bottom crosspiece from spreading.

Fig. 84 shows a rack 7 x 16 ft., constructed with a set of No. 1 B.T. Rack Clamps. Use 2-in. lumber, dressed on both sides, making the sills and crosspieces $1\frac{3}{4}$ in. Dress the 1-in. boards on one side.

Material Required

Main Sills: Two pieces, 2 in. by 8 in. by 16 ft. long; crosspieces, 2 in. by 4 in. by 7 ft. long.

Front Ladder: Two pieces, 2 in. by 4 in. by 8 ft. long; four bottom crosspieces, 2 in. by 4 in. by 4 ft. long.

Side Cover: Four boards, 1 in. by 10 in. by 16 ft. long; bottom cover, two boards, 1 in. by 12 in. by 16 ft. long (not shown).

This style of Rack is most generally used, and can be built by any farmer with little else than a monkey wrench.

With Set No. 2, use 2 in. by 10 in. Sills, or 2 in. by 6 in. crosspieces. The specifications for rack material may be further varied by using Clamps of other sizes.

B.T. Rack Clamps are packed in boxes, one complete set in each box.

The BT Load Binder

To bind a load of straw securely with a binding pole is not an easy task. It requires two men, a good tough pole from 20 to 25 ft. in length, and good chains. With a rope and the "B.T." Load Binder, a boy can bind a load much more securely in quarter the time.

Fig. 164 (Load)

List, \$3.00 each

Complete with Rope (Load)
List, \$4.00 each Weight 11 lbs.

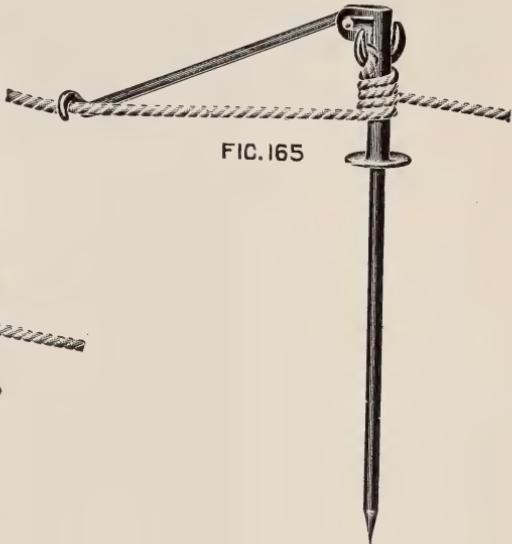


FIG. 165

Fig. 164

The "B.T." LOAD
BINDER, with binding
rope tightened and
ready to be hooked.

(Patented in Canada
1907. Patent No.
106472.)



FIG. 164

Fig. 165

The "B.T." LOAD
BINDER hooked on
the binding rope.

Directions

Having the load well rounded in the centre, tie the rope from front to back, push the harpoon of the Load Binder into the top of the load, raise the rope and drop it into one of the hooks and tighten by turning the handle, causing the rope to wind around the stake. When the rope is tightened, hook the handle to the rope, as shown in Fig. 165, thus holding the old binding pole, you do not have to get off the load to tighten, only give the stake another turn. Should you want to use two ropes, let them cross at the top of the load and drop the ropes, one into each hook, as above.

The "B.T." Load Binder is made entirely of malleable and steel. There is no danger of it getting broken.

Order a Load Binder with your next shipment of goods. You will be pleased with it.



THE OLD WAY

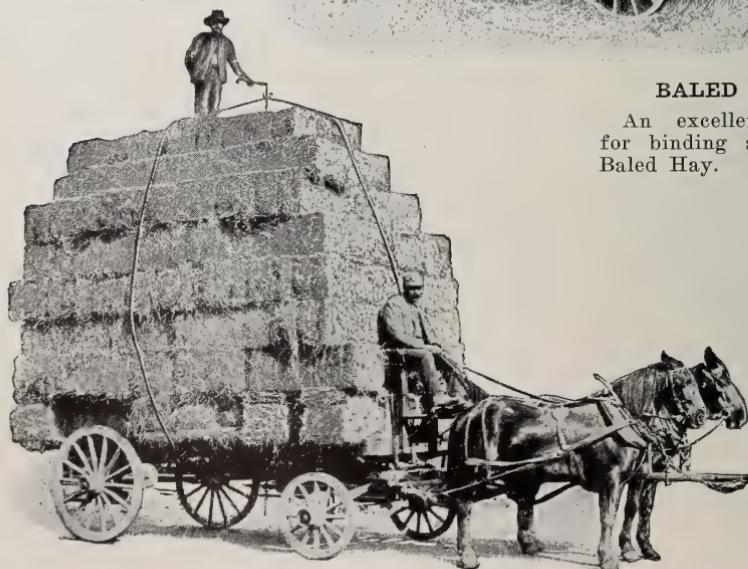
Requires the strength of two men to operate, and a pole 20 or 25 ft. in length, weighing from 50 to 100 lbs.

THE NEW WAY

The "B.T." Load Binder is made of malleable iron, is 3 ft. in length, and weighs about 11 lbs.

It ties the load more securely, and does it in one-half the time.

Can be easily operated by a small boy.



BALED HAY

An excellent device for binding a load of Baled Hay.

Feed Floor Truck

Fig. 281 illustrates the BT Floor Truck. Every store, warehouse, flour mill, stable, etc., can find a use for a truck of this description, for wheeling heavy weights.



Fig. 281 (Shop) List, \$22.00 Weight 180 lbs.

Fig. 281 illustrates our regular floor truck, which has a capacity of 16 bushels. It is 5 ft. 10 in. long, 28 in. wide, and 2 ft. deep. The large wheels are 14 in. in diameter and run on a one-inch cold rolled steel shaft axle. The ends and the bottom of the box are made of an extra heavy sheet of galvanized steel. The frame is built very substantially of maple, and the sides are made of matched white pine, bound along the edges with band iron.

We will vary the dimensions of this truck to suit any particular requirement, and will also vary the construction, to meet particular conditions. We have supplied a number of these trucks for use in flour mills. In this case the end of the truck is removable, so that bags may be easily piled in. We shall be only too pleased to estimate on trucks that vary in size or construction from the one illustrated above.

Silo Irons



Fig. 493 (Adage)

Fig. 493 illustrates the B.T. Silo Iron. Though primarily intended for the purpose of holding the brace rods on wood silos, they can, of course, be used in a similar way on wood tanks, penstocks, etc.

The blocks are made to accommodate up to a $\frac{3}{4}$ in. rod. Three-quarter inch should be used for the bottom half of the silo. Above the centre five-eighth inch rods are sufficient.

The rods should be placed from fifteen inches to three feet apart, according to the height and size of the Silo.

Fig. 493 (adage) each	40c
$\frac{5}{8}$ -inch Rods, without weld, complete with nuts and washers (adorne).....	per foot 8c
$\frac{3}{4}$ -inch Rods, without weld, complete with nuts and washers (cat).....	per foot 11c

The BT Platform Floor Truck

This truck is 4 ft. long and 27 in. wide. The platform is 18 in. high. The wheels are 16 in. in diameter, and very heavily made. The small wheels at the two ends are six inches in diameter. The main wheels run on the 1 inch cold rolled steel axles and are placed inside the frame so that they do not take up any extra room. The frame and platform are made of the best dry hard maple.

As shown by Fig. 488 the frame is braced on the corners with heavy steel bars, so that it will withstand a heavy shock. This truck will safely carry from 1,500 to 2,000 pounds.

We also make a lighter form of this truck with the large wheel having a diameter of 12 in. and the small wheels 5 in. The frame, instead of being $6\frac{1}{2}$ in. is 5 in. deep and the top of the platform is 14 in. from the ground instead of 18 in.

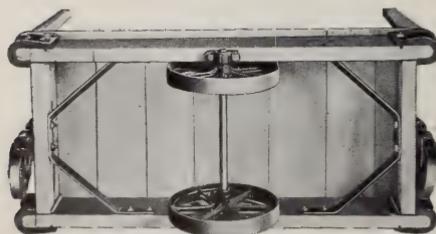


Fig. 488

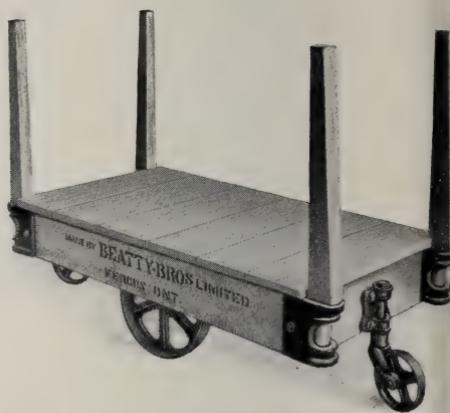


Fig. 332 (Store) Weight 190 lbs.
List, \$15.00. Heavy style.

Fig. 332 (Stant)
List, \$14.00. Light style.

We supply both these sizes boarded up at the ends for use in flour mills when required, and will also vary in any way the dimensions of these trucks.

The post sockets on the B.T. Truck are rounded as will be observed by a glance at Fig. 332. This is a great advantage as the rounded castings are in far less danger of being chipped or broken, and will not cut or injure sacks or any other articles with which they come into contact.

The BT Light Overhead Conveyor Track

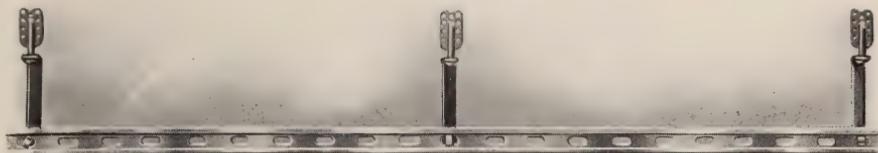


Fig. 217 (Dunner)
Track complete with joints
List, **15c** per ft. Weight $1\frac{3}{4}$ lbs. per ft.

Of all overhead tracks on the market none can compare with the B.T. The fact that over one million and fifty-six thousand feet of this track have been sold, since its introduction only two years ago, sufficiently attests to its popularity.

It is heavier per foot than any other, and is a full 2 in. in depth. It is designed in the shape of an I beam so that it will carry the greatest possible strain for the amount of material used. It is made of the toughest and stiffest high carbon steel, and yet can be bent to any curve without heating. Its rounded wheel surface offers a minimum resistance to the grooved travellers of the B.T. Conveyers, and as these travellers are arranged in tandem pairs on solid one-piece roller arms they must always stand in perfect alignment with the track and cannot bind on the curves.

It is the handiest track on earth to erect because the hangers can be put on every 2 in. along the track without bolts, nuts or wrenches. See Figs. 210 and 212 on the next page. We guarantee this track to carry any load up to 1,000 lbs., providing it is properly erected and the hangers are not more than 3 feet apart.



FIG. 214

Fig. 214 shows the parts of the splice for the "B.T." Track. Four heavy bolts are used which pass through the track, and as the joint straps fit tightly in the channel the track cannot sag.

The BT Heavy Overhead Track

This track is built on the same principles as the light track described above. The only difference being that it is drilled for hangers every 12 in. instead of every 2 in. The hangers fasten with bolts instead of buttoning on. We guarantee this track to carry any load up to 2,000 lbs., and it is extensively used for overhead conveyers carrying heavy weights, such as those used in Coal Sheds, Brick Yards, etc.



Fig. 432 (Dent)
Complete with joints, bolts and hangers
List, **40c** per ft. Weight 4 lbs. per ft.

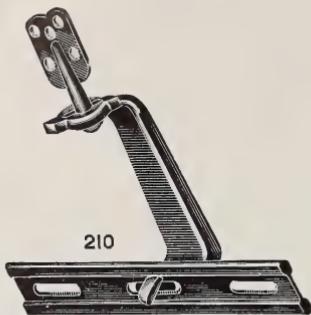


Fig. 210 (Delta)
Swivel hanger. List, **15c.**



Fig. 215.— 6" to 10" List, **22c.** (Dummey) 11" to 15" List, **24c.** (Doctor)
16" to 20" List, **26c.** (Dentist) 21" to 25" List, **28c.** (Dense)
Extension Bracket only for Ceiling. List, **8c.** (Dong)

Fig. 210 shows the B.T. Swivel Hanger. This meets all conditions and can be used in any position. As the hanger and nailing bracket are connected by a swivel they may be attached to the overhead supports at any angle to the track.

Fig. 212 shows the hanger just inserted in the track. By a single movement it is brought into position ready for attaching overhead as shown in Fig. 210.

In many buildings because of very high ceilings, mud sills or low doorways it is necessary to suspend the track a distance below the overhead supports. To enable this to be done solidly and quickly. We designed our Extension Hanger shown in Fig. 215. Fig. 136 shows the "B.T." Extension Hanger with bracket for attaching to a flat ceiling.

BT Switches for Overhead Conveyor Track

Fig. 54 illustrates the B.T. two-way switch. B.T. Switches are very easy to erect and certain in action. They are both left and right and can be operated from the ground. It is impossible for the conveyor to run off an open switch, as the B.T. automatically blocks itself. Fig. 434 shows the three-way switch for the heavy track, as will be noted from the illustration the switches for the heavy track are built on the same principle, but are of course proportionately heavier. A hinge for the track is included in the prices of the switches for heavy track.

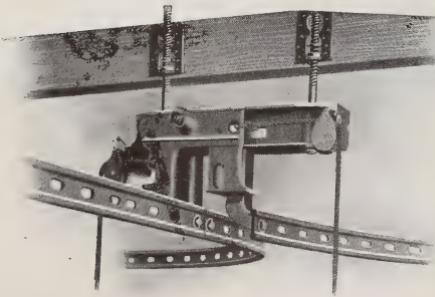


Fig. 54.—Two Way Switch for Light Track.
List, **\$3.00.** (Duck) Weight 24 lbs.
Three Way Switch for Light Track.
Fig. 130. List, **\$4.00.** (Dusk)



Two Way Switch for Heavy Track.
List, **\$5.50.** (Doll) Weight 30 lbs.
Three Way Switch for Heavy Track.
Fig. 434. List, **\$7.00.** (Dolly) Weight 37 lbs.

BT Overhead Conveyors

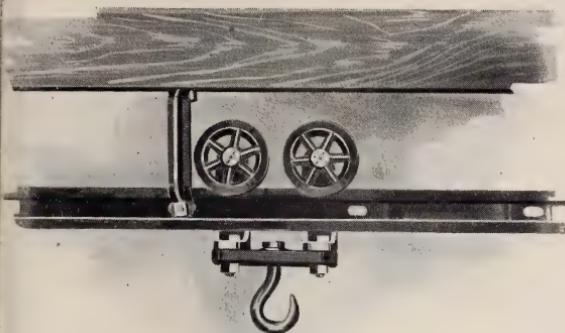


Fig. 426 Code, Dandy List, \$3.00 Weight 25 lbs.

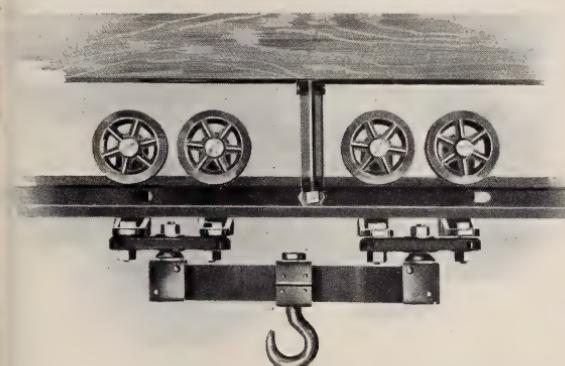
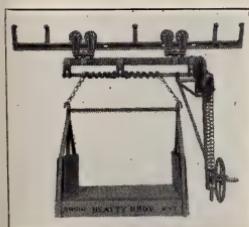


Fig. 427 Code, Data List, \$6.50 Weight 62 lbs.

On this page we illustrate some of the special Conveyors we have made for use in different industries. We can make conveyors for use in Factories, Tanneries, Ice Houses, Brick Yards, Coal Sheds, Butcher Shops, Canning Plants, etc. We are giving, herewith, the prices charged for the different conveyors illustrated, which will be an approximate guide to the price of any special conveyor. We shall be only too pleased, however, to estimate on any conveyor for any special purpose. In asking for estimates on special conveyors of this description kindly give some idea as to the construction required.

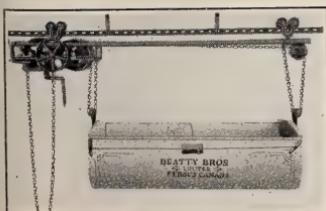
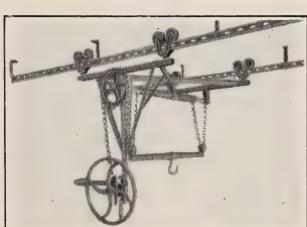
Our experience in building overhead conveyors of every description, combined with the patented features of B.T. Track, Roller Arms, Hangers, Switches, etc., insures an outfit that we are confident cannot be equalled anywhere. We carry in stock the two-wheeled and four-wheeled trucks shown in Figs. 426 and 427.

We also make Feed and Litter Carriers for use in barns and stables. We have a special Catalogue covering these lines, describing them more fully than would be possible here which we shall be pleased to mail on request.



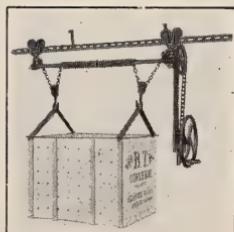
Conveyor for Ice
Price, \$26.00

Conveyor for Fruit-Canning
Plant
Price, \$26.00



Conveyor for Leather
Tannery
Price, \$35.00

Conveyor for Pickle
Factory
Price, \$26.00



The BT Water Bowl

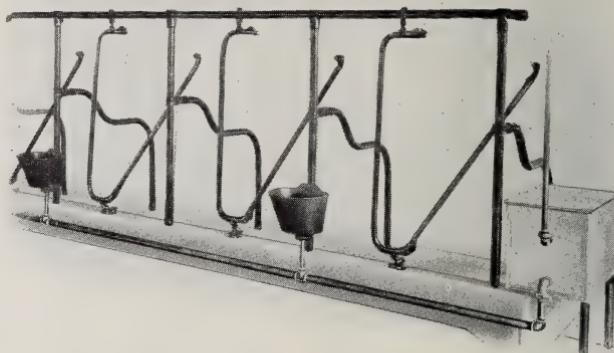


Fig. 398

To get the best results from cows it is necessary to have an abundant supply of fresh water constantly before them. The water should be of such a temperature that they can drink it in comfort and it is out of the question to expect good results from your cows when they are driven out into the sleet and storm to drink from a frozen trough. When the water is icy cold cows do not drink one-half what they require for the maximum production of milk. This falling off means a big loss and the injury to the cows must also be considered.

Fig. 398 shows the B.T. Water Bowl system. The cost of putting such a system in a stable is not great. Only one bowl is needed for every two cows. The bowls can be used with any kind of stall, either wood or steel. Farmers who are using them write us that the increase in the milk yield paid for the whole outfit in one year's time.

B.T. Water bowl system installed in a stable saves all the labour and time required to release the cows and drive them out to the spring or trough. This saving amounts to a large item in one year's time and in bitter winter weather it means a great deal to the farmer.

The B.T. Water bowl helps to prevent disease among the herd. When the cows drink from a common trough any disease will quickly spread from one cow to a whole herd, and the loss of a single valuable cow through disease would more than pay for a whole outfit.

The following pages describe the B.T. Bowl and fittings in detail and point out the different features of the B.T. Bowl that make it superior to any other on the market. Any water bowl system is better than driving the cows out to a frozen trough, but we can justly claim that no other water bowl system on the market fills the requirements of convenience, cleanliness, and adaptability like the B.T.

The BT Water Bowl

Figs. 357 and 358 show sectional views of the B.T. Water Bowl. The strong features of the B.T. Water Bowl are:—

1st.—Large capacity. The B.T. Bowl is 14 in. x 12 in. and 11 in. deep over all, and holds about 4 gals. of water. There is some capacity to such a bowl. Two cows can drink from it comfortably at the same time and they are not down to the bottom of the bowl in a moment.

2nd.—The B.T. Bowl is 9 in. deep inside. Other water bowls are on an average only 4 in. deep. This is a most important point as the depth of the bowl regulates the speed with which the bowls refill after being emptied. The B.T. Bowl permits a fall of 9 in. after the water leaves the regulating tank. It can be easily seen that the water bowls will fill more than twice as fast as any other bowl on the market. This insures a constant supply of fresh water in the bowl, and also permits a far greater number of water bowls to be fed from one regulating tank. We have equipped barns using only one regulating tank to 26 water bowls with perfect success whereas 12 is the greatest number recommended by the makers of any other bowl.

3rd.—The bowl is heavily and strongly made. It weighs some 20 lbs., which is more than double the weight of other bowls and three times as much as some.

4th.—The valve seat is made of brass and so will not rust out. There is no danger of the bowl leaking after a few years.



Fig. 357

List, Japanned \$2.00 (Shunt)

Galvanized, \$2.50 (Sleigh)

Weight 20 lbs. each

5th.—The bowl is fitted with a small plug as shown in Fig. 358. By removing this, any sediment that settles at the bottom of the bowl around the valve seat can be easily washed out.

6th.—The valve seat is so designed that it prevents any sediment from dropping into the pipe and choking it up.

7th.—The B.T. bowl is specially adapted for steel stalls and is handily attached in a perfectly rigid manner.

8th.—The edge of the bowl is rounded so that it will not injure the animal's jaw while drinking. It also greatly strengthens the bowl.

9th.—The bowl is very neat in design, and a row of them presents a very nice appearance in the stable. They are finished with a durable metallic paint that prevents rusting.

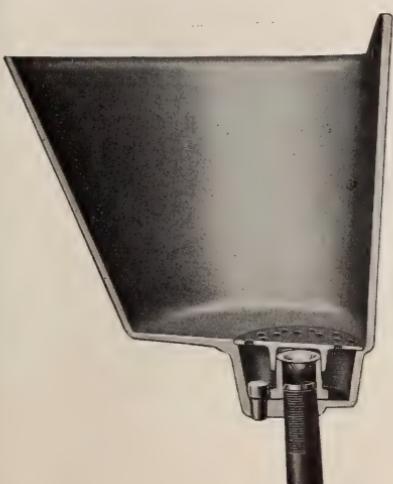


Fig. 358

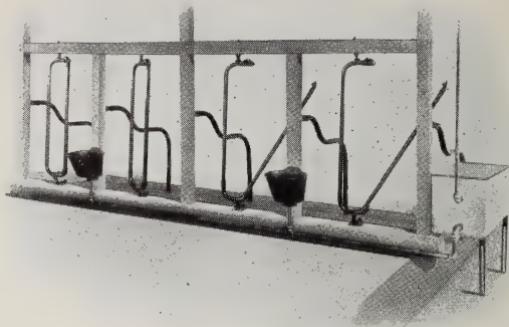


Fig. 400

How It Works

Water from a spring or reservoir is pumped into the overhead supply tank, supported upon the rafters, above the stalls. This feeds into a small Float Tank, shown at the right of the illustration. The cow bowls are placed level with this, and the supply of water in the bowls is controlled by the Float Tank.

The main supply pipe runs from the bottom of the Float Tank along the floor of the manger. At every other stall, a short length of pipe connects the main pipe to the bowls.

The short upright pipe terminates in the bottom of the bowl, where it is connected by a brass valve seat. As the brass will not rust out, there is no danger of the bowl ever starting to leak around the inlet pipe. An aluminum valve fits into this brass valve seat, preventing the dirt from getting in, and also preventing the water, when once in the bowl, running back. The valve seat is also protected by a bell-mouthed cap, which causes any dirt which may settle to the bottom of the bowl to settle in the recess around the bent. This recess is fitted with a rubber plug, which may be pulled out at any time to wash the dirt out of the bottom of the bowl.

We have installed, as mentioned on page 148, an outfit of B.T. Water Bowls with one regulating tank to 26 water bowls. This, however, was in a new stable, and the bowls were installed very carefully. To be absolutely on the safe side, it is well to use two regulating tanks if there are more than twenty bowls. The B.T. Regulating Tank is described in detail on page 146.

Pipe and Fittings

We recommend the use of galvanized pipe. The main supply pipe should be not less than 1 in., and, on a large job, it is better to be $1\frac{1}{4}$ in. The short upright pipe should be $\frac{3}{4}$ in. The top of the bowl should be placed from 22 to 24 in. above the level of the floor of the cattle-stand, and the top of the regulating tank should be placed about 4 in. higher than the top of the bowls.

The illustrations show how handily the B.T. Water Bowl is attached to steel stalls. We send the malleable clips necessary for this purpose.

For prices of pipe see page 146. Details of Overhead Storage Tanks are given on pages 147 and 148.

BT Economy Water Bowl

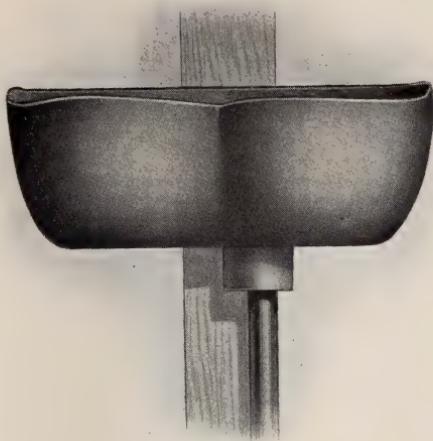


Fig. 401

With parts for attaching to stall.

Japanned List, \$1.50 each, (Shanty)
Galvanized List, \$2.00 each, (Stat)

that any sediment at the bottom of the bowl cannot get into the water pipe.

This bowl may be used with a wood stall post similar to the one shown on page 144, when desired.

The same regulating tank and float tank which is used with the B.T. Water Bowl is used with the Economy, and the same size pipe is recommended. This bowl weighs 18 lbs.

The Single Economy Water Bowl

The Single Economy Water Bowl, Fig. 402, is made along the same lines as the Double Economy, and can be used either with a steel stall or with the wood stall, shown on page 149, and we supply the clips necessary for attachment. It can also be used with the old style wood stall. The same regulating tank is used with it as with the B.T. or with the Double Economy. The weight of this bowl is 12 lbs.

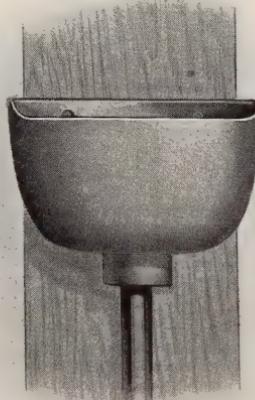


Fig. 402
With parts for attaching to stall.
Japanned List, \$1.25 each, (Slant)
Galvanized List, \$1.75, (Spank)

Regulating Tank and Fittings for BT Water Bowls

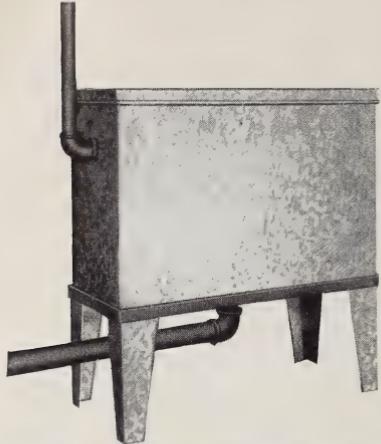


Fig. 489

Fig. 460. (Shad) Regulating Tank Complete with Angle Iron Stand, Float Valve, Cover, Intake and Outlet Fittings. List, **\$8.00**. Weight 32 lbs.

If Angle Iron Stand is not required deduct **\$1.00** from List Price.

The angle iron stand is very strong and perfectly rigid, and holds the tank in such a way that there is no fear of it falling off.

The outlet on the B.T. Regulating Tank, shown in Fig. 489, is fitted with a valve, which prevents any sediment, straws, etc., from clogging the feed pipe, and stopping the supply of water to the bowls. It is fitted with a coarse screen to keep out any large particles, and inside this, a screen of fine wire gauze. This double screen makes it impossible for any matter to collect in and clog the pipes, thus insuring a constant supply of water. The only other means by which matter could enter to clog the pipes, is through the water bowls themselves, and the splendid check valves on the B.T. bowls effectually prevent any trouble from this end.

Black and Galvanized Pipe

We are the largest buyers of pipe in Canada, as we use large quantities in manufacturing our stalls and pumps, as well as supplying it for our water bowls. This places us in a very advantageous position to buy pipe, and, buying as we do in such large quantities, we are able to insist upon the quality being uniformly good. For price of Pipe Fittings, see page 60.

Diameter of Pipe in Inches		Price Per 100 Feet	
	Black	Galvanized	
3/4.....	\$4.00	\$6.00	
	6.00	8.50	
1 1/4.....	8.00	11.50	
1 1/2.....	9.50	14.00	
2	13.00	18.00	

Fig. 497 shows the B.T. Wall Trough, for use in horse stables. This can be fed from a tap above the trough, as shown in Fig. 497, or from a regulating tank, the same as an ordinary water bowl. The valve shown above in Fig. 489 is always sent with the trough. If fed from the above, the valve is placed near the top of the trough, to act as an overflow in case the tap is left running. If fed from a regulating tank, the water, of course, enters from the bottom, and the valve performs the same duty as the check valve in the B.T. bowl. The small size has a capacity of approximately 12 gallons, and the large size 15 gallons.

Fig. 460 shows the B.T. Regulating Tank and the Angle Iron Stand for same. B.T. Regulating Tank is made very large. The dimensions are 24 in. x 12 in. and 16 in. deep. It is made of very heavy galvanized steel and the valves and float are made of brass and copper. It has a capacity of 15 gallons. Brass that is in the float and valve is of the very best quality that can be purchased. We are the only firm supplying a lid on our regulating tank. It is out of the question to expect the water to remain clean when the tank is open at the top to admit any kind of dirt or rubbish. We are also the only firm supplying jam nuts with washers for the intake and outlet on the tank. The outlet is always made 1 1/4 in. and the intake 3/4 in. in diameter unless otherwise ordered.



Fig. 497

Side Wall Water Trough.

No. 1. (Seal) 25 x 14 x 12

List, **\$8.00**.

No. 2. (Sect) 30 x 18 x 12

List, **\$10.00**.

Wood Storage Tanks

Our wood tanks are built of either White Pine or Louisiana Red Cypress. Every tank is carefully made and inspected. This insures a perfect tank, easily set up. Round hoops with adjustable lugs are put on all tanks unless otherwise ordered.

We strongly recommend the use of round hoops. This style of hoop is several times as thick as the flat hoop of the same weight. Consequently, there is several times the amount of metal to rust before the hoop gives out. The corrosion of the hoops is principally from the inside, where the bands bear on the staves, and so with round hoops the point of attack is materially lessened, as only a small part of it bears on the tank. Also, nearly the entire surface of a round hoop can be examined, and can also be well painted, whereas flat hoops can only be painted and examined on one side after they are placed on the tank.

Wood tanks should always rest on joints or sills under the bottom of the tank. The weight of the tank should not be allowed to come on the ends of the staves which extend below the bottom.

In putting a tank together, do not trust to the hoop drawing the staves up on to the bottom. If you have not made the tank tight and got the staves in place before you put the hoops on, you never will.

Cypress is without question the best wood for tank purposes. It shrinks and swells, warps and twists less than any other wood, and has less knots and defects. All joints are machine-made and sawed on radial lines with due regard to the pitch of the staves.

All dimensions given are measured outside over all. We shall be pleased to estimate on any other styles or sizes of wood tanks on request.

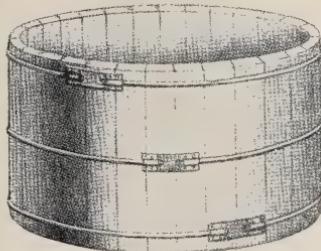


Fig. 492

Round Storage Tanks. Fig. 492

Made of $1\frac{1}{2}$ in. and 2 in. Cypress and
2 in. Pine

Round Iron Hoops with Malleable Draw Lugs.

Length of Stave Feet	Diameter of Bottom Feet	Capacity Gallons	1 $\frac{1}{2}$ in. Cypress			2 in. Cypress			2 in. Pine	
			No. of Hoops	Weight Pounds	Price	Weight Pounds	Price	Weight Pounds	Price	
2	3	66	2	100	\$6.50	120	\$8.25	110	\$7.25	
3	3	108	3	140	8.30	180	10.30	150	9.20	
2	4	125	2	150	9.90	180	12.10	160	10.70	
4	4	283	4	260	14.50	320	17.90	270	15.90	
2	5	207	2	190	13.70	210	16.50	200	14.50	
$2\frac{1}{2}$	5	272	3	240	14.70	300	17.90	260	16.20	
3	5	337	3	260	15.70	330	19.25	280	17.20	
4	5	467	4	340	17.75	420	22.40	360	19.70	
5	5	597	4	400	19.90	500	25.50	430	22.00	
2	$2\frac{1}{2}$	252	2	230	15.50	310	19.00	250	16.50	
$2\frac{1}{2}$	$5\frac{1}{2}$	312	3	370	16.50	340	21.90	290	19.25	
2	6	304	2	260	16.20	330	19.25	280	17.20	
$2\frac{1}{2}$	6	400	3	310	18.20	380	21.40	330	19.25	
4	6	688	4	440	21.90	510	28.20	470	24.10	
5	6	880	4	520	25.40	640	33.00	550	28.20	
6	6	1072	5	600	28.90	740	37.90	640	32.40	
$2\frac{1}{2}$	7	550	3	380	20.00	470	26.20	400	22.00	
5	7	1210	4	630	31.00	780	39.90	670	34.40	
6	7	1474	5	730	35.00	910	45.40	780	38.90	
7	7	1738	6	820	39.90	1020	51.00	880	43.40	
2	8	551	2	400	21.40	500	27.50	430	24.10	
$2\frac{1}{2}$	8	725	3	470	24.10	580	31.00	500	26.90	
6	8	1940	5	880	42.00	1080	53.70	930	46.80	
8	8	2630	7	1110	52.25	1360	66.70	1190	57.80	

Steel Storage Tanks

All list prices and weights on steel tanks are based on tanks made from No. 20 gauge galvanized sheets, unless otherwise ordered. For No. 18 gauge tanks add 30 per cent. to No. 20 gauge lists, and for No. 16 gauge tanks, add 60 per cent. For all galvanized trimmings add 10 per cent. to the regular lists.

EXAMINE TANKS. We carefully inspect every tank before same is shipped, and every precaution is taken to ensure the tank being water-tight when it leaves the factory; but on account of the possibility of their being subjected to rough usage in transit, we caution our patrons to carefully inspect all seams before putting tank into use. In cases where tanks are to be placed in buildings, we advise testing them with water before placing in position. A little precaution at the proper time often saves both time and money.

CAPACITIES. We estimate capacities by the standard liquid measure of 31½ gallons to the barrel. Capacities are based on the outside measurement, which should be taken into consideration when it is desired to purchase a tank of specified capacity.

KNOCKED DOWN TANKS. We can furnish any tank knocked down when desired. Tanks shipped in this way take a low rate of freight.

TAPPING TANKS FOR PIPE. Our prices do not include any pipe fittings, but we will cut holes in tank for pipe without extra charge. We will put in lock nut and nipple or threaded flange connections, for which an extra charge will be made.

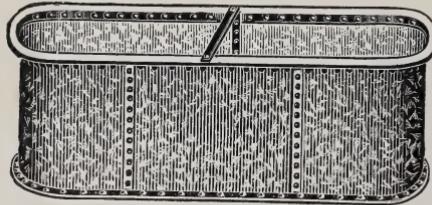


Fig. 490

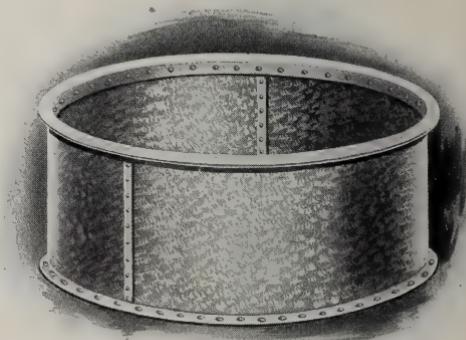


Fig. 491

Round End Tanks, 490

Width Feet	Height Feet	Length Feet	Capacity Gallons	Weight Pounds	Price List
2	2	4	91	74	\$6.20
2	2	5	117	88	7.25
2	2	6	144	102	8.00
2	2	7	170	121	9.00
2	2	8	197	135	9.90
2	2	10	250	166	12.40
2	2½	8	246	151	10.40
2½	2	5	145	93	8.25
2½	2	6	178	110	9.00
3	2	6	213	134	10.40
2½	2	8	245	141	11.00
2½	2	10	312	177	13.10
3	2	8	295	156	11.70
3	2	10	384	185	13.50
4	2	8	386	169	12.75
4	2	10	496	203	15.80
4	2	12	606	243	20.00
4	3	16	826	320	25.90
5	2	16	1073	375	27.50
6	2	8	550	215	19.00
6	2	10	813	262	21.00
6	2	16	1218	427	31.00
2½	2½	8	305	153	12.75
3	2½	8	370	165	13.75
3	2½	10	492	200	15.50
4	2½	8	485	180	15.20
4	2½	10	646	226	19.25

Round Tank, Fig. 491

Diameter Feet	Height Feet	Capacity Gallons	Weight Pounds	Price List
3	2	91	69	\$6.20
4	2	166	97	7.60
4	2½	215	106	8.70
4	3	254	115	9.70
4	4	338	145	11.40
4	5	423	168	13.10
4	6	508	191	15.20
4	8	688	220	19.25
5	2	262	129	10.00
5	2½	342	141	11.00
5	3	411	154	12.10
5	4	548	181	14.50
5	5	675	211	17.60
5	6	810	240	20.00
5	8	1096	285	24.75
6	2	384	167	12.75
6	2½	480	184	13.75
6	3	583	193	14.90
6	4	768	237	17.90
6	5	966	356	20.70
7	2	486	206	14.90
8*	2	691	245	19.25
8*	2½	864	270	20.70
10*	2	1089	340	26.90
10*	2½	1361	390	28.90
6*	6	1200	326	27.50
6*	8	1600	403	33.70
8*	5	1800	410	34.40
8*	6	2133	465	38.50
8*	8	2854	560	49.50
8*	10	3592	670	55.70
10*	8	4580	750	65.40
10*	10	5680	877	75.70

Tanks marked thus * are shipped 'knocked down'

BT Iron Horse Stable Fittings

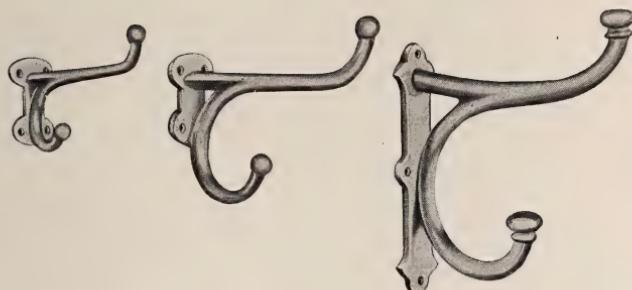


Fig. 340.—8 in. Harness Hook (Soar). List, **15c.** each. Weight, 1 lb. each.

Fig. 341.—12 in. Harness Hook (Smock). List, **40c.** each. Weight, 4 lbs. each.

Fig. 508.—14 in. Harness Hook } (Sunder). List, **\$1.00** each. Weight, 12 lbs. each.
Extra Heavy }

Figs. 340, 341 and 508 show our line of Harness Hooks. The 14 inch size is extra heavy. These Harness Hooks are very strong and are also very neat in design.

Fig. 334 shows an inexpensive style of Feed Box. This is made of one casting, and has a rolled edge to prevent the feed from being worked out of the box. The length of the sides is 16 inches. The depth of the bowl is 10 inches.

Where desired we supply this bowl with a sieve bottom, as shown in Fig. 456. This is made in the same size, namely, 16 inch. The grating at the bottom is fitted closely into a recess in the bottom of the bowl and held by clips moulded in one piece with the bowl itself.

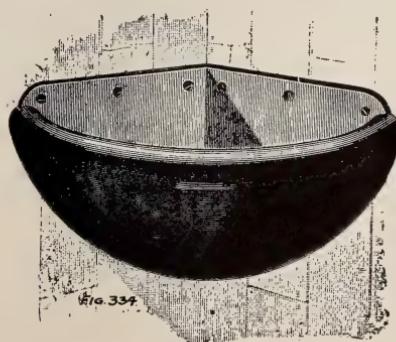


Fig. 334.—16 in. x 16 in.
List, **\$2.00** (Spray). Weight, 29 lbs.



Fig. 456.—16 in. x 16 in.
List, **\$2.50** (Step). Weight, 29 lbs.

BT Iron Horse Stable Fittings



Fig. 509
List \$4.50

Code, Saunter
Weight 62 lbs.

Fig. 302 shows a substantial Hay Rack that we make for box stalls. These racks are 3 feet in height and project from the corner 18 inches.

Fig. 509 shows a Hitching Post. We supply this post any length. All posts are fitted with a ring. The standard length for the hitching post is 6 feet, and the posts should be put 3 feet in the ground. The flange at the bottom holds it solid.

Fig. 344 shows a cap which we make for wood hitching posts. They have a ring fastened securely in them for tying.

Fig. 308 illustrates the BT Spring Hay Rack. These are extremely handy where it is desired to feed the hay from the passage without going into the stall. They also have the additional advantage that they take up no room inside the stall. When the hay is put into the feed rack, the heavy springs at the bottom compress the sides of the rack together so that the hay is held in tightly and cannot be wasted.

Fig. 342 shows the hitching ring, which can be attached to a post or a wall, either by lag screws or bolts.



Fig. 342
List, 50c
Code, Smite
Weight 3/4 lb.



Fig. 344.
List, 75c
Code, Slope
Weight 6 lbs.

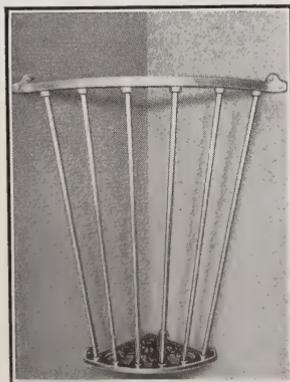


Fig. 302
Corner Hay Rack
List, \$2.00 (Shuffle)
Weight 33 lbs.

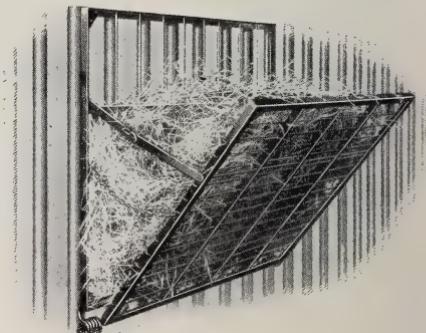


Fig. 308
Spring Hay Rack
List, \$8.00 (Sextant)
Weight 42 lbs.

BT Iron Horse Stable Fittings



Fig. 335

size

- Fig. 335 with slide 3" x 9" List, **30c** (Sour)
- Fig. 335 without slide 3" x 9" List, **20c** (South)
- Fig. 335 with slide 6" x 9" List, **50c** (Space)
- Fig. 335 without slide 6" x 9" List, **40c** (Span)

The ventilation of a horse barn is important. Fig. 335 shows a ventilating wall brick. We make this with or without slide, as desired. Size 3 x 9 inches.

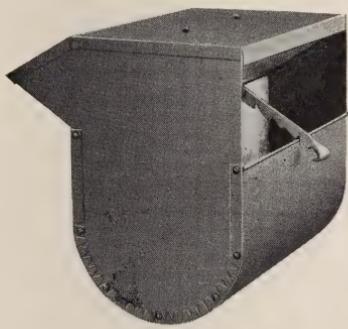


Fig. 445

List, **\$2.50** (Shabby) Weight 6 lbs.

Fig. 445 shows a fresh air inlet specially suited to the requirements of the Rutherford System of Ventilation. The bottom of the inlet should be placed on a level with the floor. This then brings the opening itself 8 inches above the floor level. The fresh outside air, being colder than the air of the stable, drops to the bottom of the inlet and from there is forced in an upward direction into the stable in such a way that it does not make a direct draught on the cattle. One inlet will provide fresh air for about four full-grown animals. The inlet is fitted with a hood on the outside to keep out snow, ice, dirt, etc. In case all the stable is not being occupied, the inlets are fitted with a damper so that they may be wholly or partially closed in the end not in use.

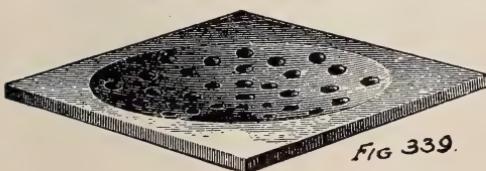


FIG 339.

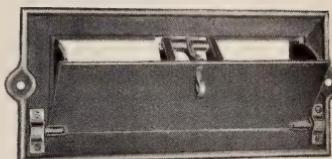


Fig. 336 Size 6 x 11 inches
List, **\$1.50** (Spark) Weight 12 lbs.

Fig. 336 shows another style of ventilator. These can be put anywhere in the wall or partition. The outside measurement of the frame is 5 x 13 in. The shape of the damper when opened directs the current of air upward so that it will not cause a direct draught.

BT CUTTER TRAP

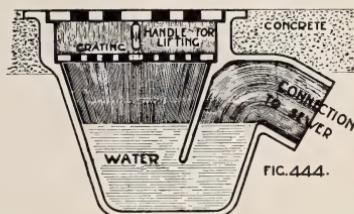


Fig. 444 List, **\$6.00** (Stress)

Fig. 444 shows the BT Gutter Trap for use at the end of gutters or in wash rooms, etc. This new trap is a great improvement on the old Bell Trap. The Bell Trap is condemned by all the best sanitary authorities. Not only does it permit the sewer gas to escape, but the muck splashes up inside the trap and cakes hard, making the trap itself filthy and unsanitary in the extreme. The BT Gutter Trap is built on the most modern principles and fills the first requirement of any satisfactory trap—it is **self-cleaning**. It is fitted with a double grating to keep out gravel or any other matter that would tend to choke the pipe.

Fig. 339 shows a simple grating for covering drain pipe. We make this in two sizes—6 in. x 6 in. and 12 in. x 12 in.

Fig. 339 6in. x 6in. List, **50c** (Spent)
Weight 8 lbs.

Fig. 339 12in. x 12in. List, **\$1.00** (Soap)
Weight 21 lbs.

BT Fittings for Gable Doors

A-Pulleys for counterbalance
B-Brackets for Door Track
T-Trolley Track

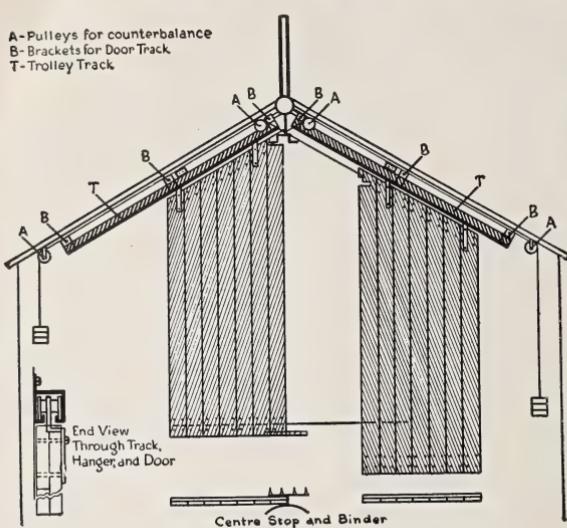


Fig. 501

cords attached to the right-hand half of the door should run over the pulleys on the left-hand side, and vice versa. T-T in Fig. 501 represents the track, and B-B the brackets for attaching the same to the barn. One pair of hangers is required for each half of the door. Three brackets are sent with each pair of hangers. These are sufficient for a door 3 feet wide. For every additional 18 inches in the width of the door, add an extra bracket.

Do not try to use ordinary Barn Door Track Hangers for hanging gable doors on an inclined track. The hangers must be vertical to work satisfactorily and not placed at right angles to the slope of the top of the door. We also supply end and centre binders to hold the doors and prevent them from banging. Below we give a list of the material needed for a Hay Door 12 feet wide.

24 feet BT Tube Track, Fig. 439.
4 extra Brackets.
2 pairs Hangers, No. 2, Fig. 439.
4 4-inch Economy Pulleys, Fig. 376.
48 feet Sash Cord or light cable, in
two lengths of 24 feet each.

1 pair End Binders.
1 Centre Binder.
Counter Weight to balance doors, about
the same weight as the door.

PRICE LIST FOR FIG. 501

Special Hangers, per pair	\$3.60	(Dory)	End and Centre binders, per pair	36c	(Dough)
B. T. Tube Track, per foot	.24	(Doubt)	Counter-balance Weights, per lb.	10c	(Douse)

BT HINGES FOR GABLE DOORS.

Fig. 502 illustrates another method of hanging a gable door: The hinges shown in Fig. 502 are placed at the bottom of the door, on the outside of the barn, and are off-set to permit the door to go outside the siding.

To close the door, two cords or chains are placed on the inside, one on each side of the door, meeting in a ring. These cords are just long enough to allow the bail pulley to hold the ring when locked in the car. The bail pulley is hooked to the ring when the door is open, and the Hay Carrier will then pull the door tightly shut. When shut, the door can be prevented from banging by two strong hooks. The door may be allowed to drop freely when it is desired to open it, as the air will cushion the fall and prevent the door from banging with too much force against the end of the barn.

In a number of cases it is desired to take the hay or grain into the barn by means of a gable door. There are a number of different ways of arranging these doors. A very good method is shown in Fig. 501.

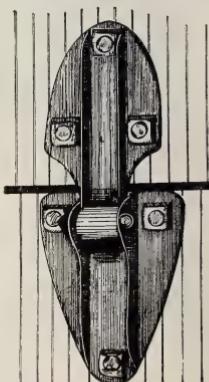
The door is divided down the centre and each half runs on an inclined piece of track. The track recommended for this purpose is shown on page 153, Fig. 439. This track is now, ice and bird-proof, and is so designed that it is impossible for the hangers to derail.

Four pulleys are required, two on each side. The doors are regulated by means of either sash-cord or light cable, which run over the pulleys A-A and carry a counter-weight on the other end. The counter-weights should be about the same weight as the door.

Do not try to use ordinary Barn Door Track Hangers for hanging gable doors on an inclined track. The hangers must be vertical to work satisfactorily and not placed at right angles to the slope of the top of the door. We also supply end and centre binders to hold the doors and prevent them from banging. Below we give a list of the material needed for a Hay Door 12 feet wide.

1 pair End Binders.
1 Centre Binder.

Counter Weight to balance doors, about
the same weight as the door.



BT Barn Door Track and Hangers

For use in Barns and Stables, Warehouses, Factories, etc., there is a big demand throughout the country for a really satisfactory Door Track and Hanger. The track and hangers described below are no experiment. For many years they have been great favorites, and their popularity increases every year they are on the market.

BT Tube Door Track and Hangers

In Fig. 439 we illustrate a barn door track and hanger that we believe to possess more points of merit than any other on the market. These advantages are briefly outlined below.

1st. By referring to Fig. 439, it will be readily seen that the rollers run inside the track, where they are perfectly protected from birds, snow, or ice. The channels in which the wheels of the hangers run cannot possibly become clogged from any cause. Any one who has used the old style of track, which becomes slippery and dirty and constantly causes the wheels to jam, will easily realize what a great advantage this is.

2nd: With this hanger the door is **centre hung**. This is a most important feature. The hanger is suspended from the exact centre of the track, and thus the wheels always run

squarely in the channels designed to receive them. This gives a smooth and even running impossible with side hung doors. In addition to this the door is, of course, hung far closer to the wall than would be the case if the door were suspended from the outside edge of the track.

3rd. By simply loosening a nut the hanger can be adapted to any thickness of door. This feature of **lateral adjustment** is another very important advantage possessed by this hanger.

4th. The hanger is so designed that the door is hinged to swing outwards without danger of breaking the hangers or binding on the track.

5th. A pair of four-wheeled hangers, as shown in Fig. 439, will carry any door up to 400 lbs. in weight. The double pair of wheels distribute the weight of the door evenly and insure that the hanger will not bind or jerk on the track.

We think we can justly claim that no other track and hanger on the market contain so many valuable features, and can guarantee that they will give perfect satisfaction. We recommend the four-wheel hanger shown above for any door over 100 and up to 400 lbs. in weight.

BT Tube Door Track and Hanger

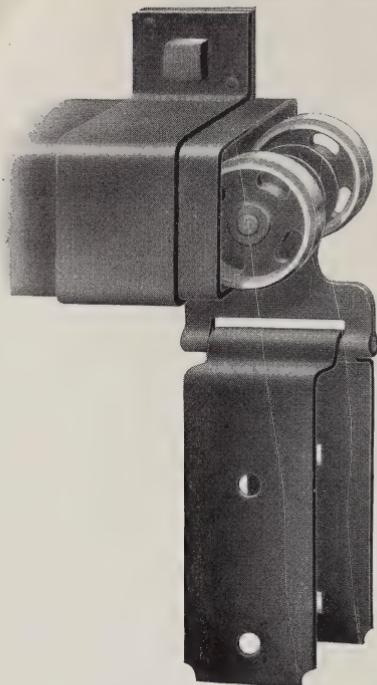


Fig. 438

No. 2 Stable Door Hanger for Tube Track.

Fig. 438 illustrates the same hanger as Fig. 439 shown on the opposite page, except that it is two-wheeled instead of four-wheeled, and is built for a lighter door. It is adapted for use with stable doors or any other door not weighing more than 100 lbs.

It possesses all the advantages of the four-wheeled hanger, except that it is not adjustable to any width of door. It is made to accommodate a door $1\frac{3}{4}$ inches in width. It is centre hung and runs in an absolutely protected position. It is bird, snow and ice proof. As this hanger should not be used for heavy doors, the single pair of rollers is quite sufficient to secure smooth and easy running.

This hanger possesses an exclusive advantage over any other, in that it is close coupled. There is one inch less space between the top of the door and the track than with any other on the market.

PRICE LIST OF BT TUBE TRACK AND HANGERS.

BT Track made in 6, 8 and 10 ft. Lengths—
Per foot, **24c.** Weight, $1\frac{1}{2}$ lbs. per foot. (Doubt)
Extra Centre Brackets for BT Track—

Per doz., **\$2.00.** (Dose)
No. 2 Two-wheeled Hangers for BT Track—
Per pair, **\$2.20.** Weight, 2 lbs. per pair. (Dower)
No. 3 Four-wheeled Hangers for BT Track—
Per pair, **\$3.00.** Weight, 2 lbs. per pair. (Dorsal)

The above prices for Hangers include two end stops and one centre hanger. We do not make any extra charge for these as other firms do.

Round Door Track and Hanger

For those who desire to use a round track, we illustrate in Fig. 437 a round track and hanger equal, if not superior, to any other on the market. This track does not, of course, possess the particular advantages of the tubular track described on the opposite page, but to those who prefer it for any reason we can heartily recommend it. It possesses a great advantage in that the riveted bracket is always in place where it belongs.

The track is made of high-carbon steel, and the brackets for same, of malleable iron, japanned.

The hangers for use on the Round Track are made of japanned malleable iron. They have ribbed backs to give extra strength, and particularly strong wheels, which have Roller Bearings. Another very strong feature of this hanger is the Lower Guide Rollers, which prevent the hanger from binding on the track or derailing.

The Round Track is particularly adapted for use indoors. Where exposed to snow, ice, etc., we recommend the BT Track.

PRICE LIST OF ROUND TRACK AND HANGER

Round Track, made in 6, 8 and 10 ft. lengths—

Per foot, **14c.** (Double)

No. 1 Round Track Hangers Per pair, **\$1.60.** (Dowdy)

The above prices include two end stops.

Weight of Round Track, 1 lb. per foot.

Weight of Round Track Hangers, 6 lbs. per pair.

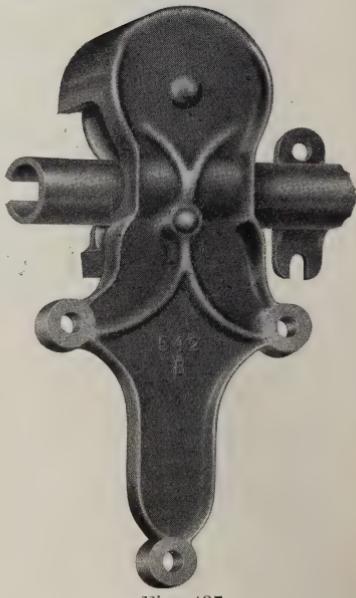
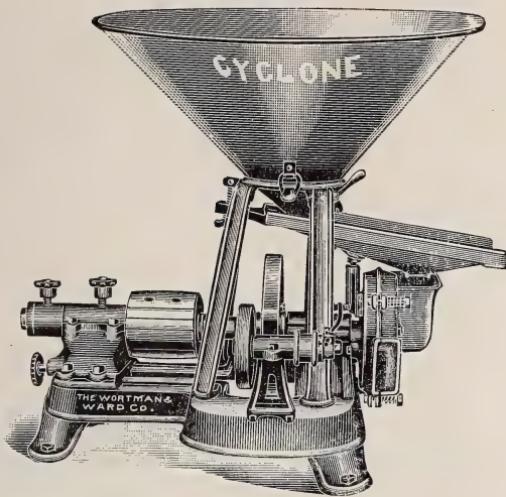


Fig. 437

No. 1 Barn Door Hanger and Round Track.

Cyclone Grinder



PRICES OF CYCLONE GRINDER

		List	Weight
No. 10....Cyclone Grinder with 7 in. flat reversible plates	(Beaker)	\$30.00	270 lbs.
No. 11....Cyclone Grinder with 8 in. flat reversible plates	(Beaver)	\$35.00	311 lbs.
No. 12....Cyclone Grinder with 10 in. flat reversible plates	(Bearing)	\$45.00	347 lbs.
No. 14....Cyclone Grinder with 12 in. flat reversible plates	(Bearish)	\$60.00	444 lbs.
One extra set of grinding plates is supplied with each grinder.			
Bagger for any style of grinder.....	(Beadle)	\$10.00	65 lbs.

7 inch Grinders have drive pulley 5 inches in diameter with 6 inch face

8 inch Grinders have drive pulley 6 inches in diameter with 6 inch face

10 inch Grinders have drive pulley 6 inches in diameter with 6 inch face

12 inch Grinders have drive pulley 6 inches in diameter with 7 inch face

Fig. 392 represents the Cyclone Grinder. This was formerly manufactured by Messrs. Wortman & Ward, of London, and has earned a splendid reputation throughout the whole Dominion. In the following pages we give the different points of merit possessed by this grinder, and we do not think we are exaggerating in the least when we state that no other Grinder on the market possesses so many splendid features. The Cyclone Grinder is suited to the heaviest work, and its working parts are all strong and substantial. Every possible device has been added to eliminate friction and to prevent the breakdown of, or injury to, the machine. It is the best grinder made for custom work.

The Cyclone Grinder has an exceptionally low frame. This frame is a heavy one-piece casting, so that there are no parts to shake loose. The low frame lowers the hopper from one foot to two feet, so that filling the hopper is rendered far easier. The metal we have saved in the frame we have put into the rest of the machine. In addition to decreasing the distance required to raise the grain in order to fill the hopper, the low frame has another great advantage, in that it greatly reduces vibration. As indicated above, the frame on the Cyclone Grinder is from one to two feet lower than that of any other grinder on the market. The hopper has exceptionally large capacity and holds over 4 bushels.

Cyclone Grinder



Fig. 498

The three most important parts of the grinder are the main shaft, the boxing, and the grinding plates. A grain grinder does heavy work, and unless the boxing and main shaft are right there is trouble with the machine heating and quickly wearing the bearings. The main shaft on the Cyclone is made of the very best cold rolled steel and is one-quarter of an inch larger in diameter than any other on the market.

The boxings are exceptionally long and heavy. They are very easily removed, so that it is absolutely unnecessary to unlace the belt to place it on the drive pulley. On no other machine are the boxings so easily removed. It is not necessary to loosen any bolts; by simply turning a hand screw the boxing is drawn off.

Another most important feature of this grinder is the ring oil bearing. A ring is suspended round the shaft, and is large enough to drop into a reservoir of oil below. As the shaft revolves, the ring, fresh from the oil bath below, revolves also, thus keeping the main shaft perfectly oiled. This is exactly the same in principle as the ring oil bearings on the largest machines; such, for instance, as those used in big electric power plants, and is a great improvement on the oil cups on other machines.

By means of a hand wheel and jam nut, the plates can be adjusted to grind either fine or coarse. This contrivance permits the greatest fineness of adjustment and keeps the plates securely in place when in use.

Another exclusive feature possessed by the Cyclone over most others on the market is that the machine is fitted with a fly-wheel. This wheel is turned on the lathe, and is exceptionally large. It will be readily seen that this fly-wheel adds great momentum to the shaft and saves a very considerable amount of power.

The shake pan is large and can be operated by side or by end shake, and is fitted with a fine dust screen.

The Cyclone is fitted with a release spring that keeps the plates safely apart while the grinder is running empty. In all other grinders there are no release springs and the plates can come together when the grinder is running idle, which, of course, is very apt to injure the grinding plates.

Cyclone Grinders

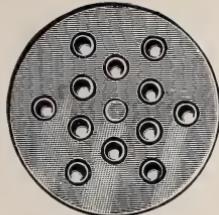


Fig. 449

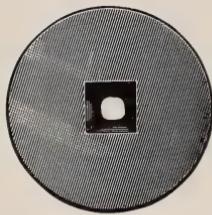


Fig. 590

Another exclusive and very important feature of the Cyclone Grinder is the ball bearing end thrust. Other machines have a simple brass disc to receive the end thrust of the main shaft, where we use ball bearings of a very special pattern. Friction is, of course, a trouble to be avoided at all costs in the bearings of any machine, as it causes them to heat and wastes power.

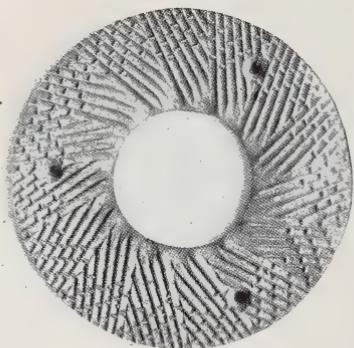
Since it is so important to avoid friction between the main shaft and the boxing, we have put a great deal of thought and experiment into producing the new type of ball bearings shown in Fig. 499. The common type of ball bearings is one in which the bowls race round and round in one common groove, as shown in Fig. 500. Not only does this entail friction between the balls themselves, but it tends to wear the boxings, causing them to rub together. As illustrated above, in our ball bearings each ball is set in a cage by itself at a different distance from the centre. This eliminates 98 per cent. of the friction. The boxings themselves are made of high Canadian tool steel specially tempered and hardened. Not only do we employ a ball bearing end thrust where other firms have none, but the ball bearings themselves are a pattern that cuts down a tremendous amount of the friction. This double feature accounts in no small measure for the splendid reputation possessed by the Cyclone Grinder.

All sizes of our Grinder, 7 in., 8 in., 10 in., and 12 in., are fitted with a cam lever, to throw the grinding plates apart. Other firms only fit their 10 in. and larger grinders with this cam lever.

The bolts that fasten the outside bonnet covering the grinding plate to the inside bonnet are fitted with springs. These springs permit the plates to come apart should a nail or any other hard substance come between them, sufficiently to prevent breaking.

The heads of the machine to which the plates are attached are turned down in the lathe, so that the plates always run true. No other firm does this.

Grinding Plates for the Cyclone Cylinder



7-in. flat reversible plates for Cyclone Grinder,	
	\$1.50 per pair. (Belted)
8-in. flat reversible plates for Cyclone Grinder,	
	\$1.75 per pair. (Bemire)
10-in. flat reversible plates for Cyclone Grinder,	
	\$2.00 per pair. (Ben)
12-in. flat reversible plates for Cyclone Grinder,	
	\$2.50 per pair. (Bend)

The Cyclone Grinder is fitted with flat grinding plates. They are made of special hard chilled iron. They are a great improvement over the concave plates usually supplied, as they decrease by fully 25 per cent. the power required for grinding, and do not require to be accurately centred.

Not only do these plates require less power and run truer, but they are designed so that the corrugations get smaller toward the outer edge of the plate. You will readily see that this is a correct principle, as the grain is gradually crushed and worked finer as it gets to the outer edge. In other plates where the corrugation gets coarser toward the outer edge, the grain is not ground any finer once it leaves the centre. A large part of the plate is thus wasted, and the grain cannot be properly ground.

To sum up, the Cyclone Grinder has at least 9 advantages not found on any other grinder, namely, Flat Grinding Plates, Ball Bearing End Thrust of special pattern, Cam Lever to separate plates on all sizes, Ring Oil Bearing, Release Springs to keep plates apart, Extra Low Frame, Extra Large Main Shaft, Easily Removed Boxings and Specially Turned Heads to the machine.

POWER NECESSARY FOR GRINDERS.

A 7-inch Grinder requires from 2 to 4 horsepower.

An 8-inch Grinder requires 6 horsepower.

A 10-inch Grinder requires 10 horsepower.

A 12-inch Grinder requires from 14 to 20 horsepower.

A 7 or 8-inch Grinder should run about 2,200 revolutions per minute.

A 10 or 12-inch Grinder should run about 2,000 revolutions per minute.

The Daisy Grinder

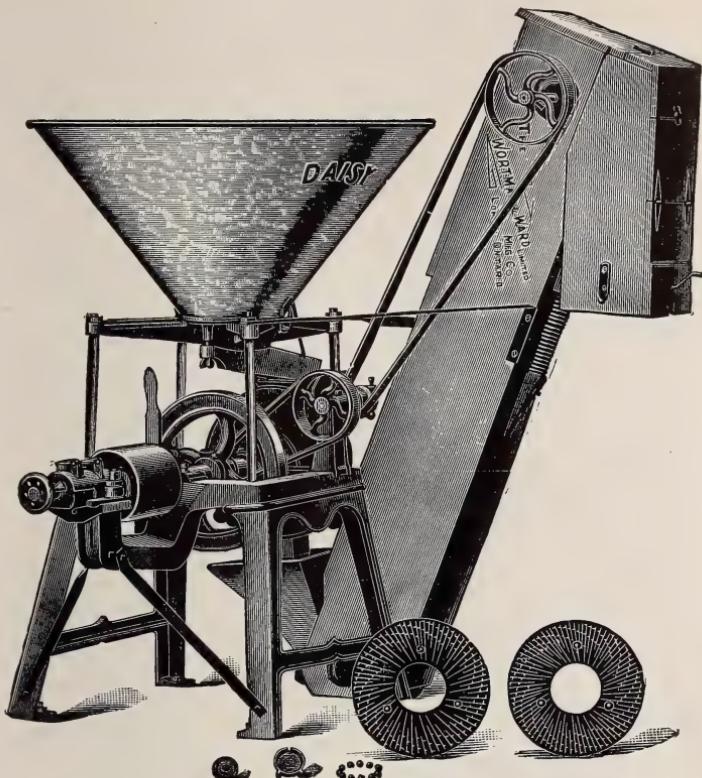


Fig. 393.

PRICE LIST OF DAISY GRINDERS

		List	Code	Weight
No. 0	Daisy with 7 in. Reversible Concave plates	\$30.00	Eagle	300 lbs.
No. 1	" " 8 " "	\$35.00	Be	315 lbs.
No. 2	" " 10 " "	\$45.00	Beach	345 lbs.
No. 3	Daisy with 10 in. Rev. Concave plates and Extra Heavy Frame	\$55.00	Beacon	375 lbs.
No. 4	" " 12 in. "	\$65.00	Bead	410 lbs.
One extra set of plates is furnished with each Daisy Grinder.				
Bagger for any of the above Grinders..... \$10.00 Beadle 65 lbs.				

The Daisy Grinder is known all over Canada. It is giving satisfactory service on thousands of farms. It has attained such popularity that the features on it not covered by patent have been copied by many other manufacturers. However, it still has many features of excellence that others cannot use, and you will do well to insist on having a Daisy.

The hopper on the Daisy is made of heavy, galvanized steel. It will not rust. It is of large capacity, holding some four bushels.

The plates can be set for grinding, or the reverse, by means of a lever which is in easy reach of the operator, and can be moved in an instant so that the buhrs can be left apart until the grain begins to drop into the hopper, when, with a slight movement of the lever, the plates can be set and the grinding begun. Should a nail or any other hard substance get between the plates they can be pulled open and closed again without stopping or changing the flow of grain. It is also provided with relief springs of tempered steel, which admit of the plates coming apart enough to prevent breaking, should nails or other hard substances get between them.

The Daisy Grinder

The main frame is heavy and well braced. The shaft is 2 inches in diameter (considerably larger than others), and is supported by three bearings. The solid construction of the frame with the heavy shaft supported by three bearings results in the machine running very smoothly and without noise. A machine which runs smoothly and without vibration takes less power and wears longer.

The end of the shaft turns on ball bearings and runs in a box partly filled with oil, free from dust or dirt, thus reducing the friction which arises from the pressure of the buhrs when grinding.

The feed is regulated by an adjustable shake that can be set to give the feed pan only a perceptible quiver or a violent shake.



Fig. 394

We provide all sizes of the Daisy Grinder with an excellent bagger, when desired. The bagger is attached to the grinder as shown in the illustration on page 159. It will hold two bags at one time.

Fig. 394 shows the end bearings used on the Daisy and Cyclone Grinders to receive the lateral pressure of the main shaft. The balls are made of the finest quality of polished steel.

The boxings, shown in Fig. 395, are made of chill-hardened iron. This boxing accounts largely for the remarkable easy running and great wearing qualities of the Daisy.

The 7 in. Grinder has drive pulley 5 in. diameter and 6 in. face.

The 8 in. Grinder has drive pulley 5 in. diameter and 6 in. face.

The 10 in. Grinder has drive pulley 6 in. diameter and 6 in. face.

The 12 in. Grinder has drive pulley 6 in. diameter and 7 in. face.

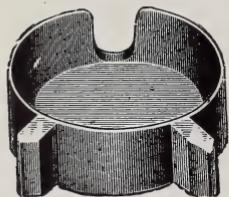


Fig. 395

Grinding Plates

No matter how excellent all the other parts may be, a grinder is not much good unless the plates are of the right design and are properly made. W. & W. grinder plates are known everywhere for their good wearing qualities and the excellent work they do. This is owing to two reasons:

First, the design, which has only been gotten out after careful experimenting, is superior to other styles, and the greatest care is taken to have the plates all so perfectly parallel with each other.

Second, the material we use is a certain grade of very hard iron, and to insure the quality always being the same, we have put in a special cupola for melting it. You can always depend on W. & W. grinding plates. So great has the demand become for them that they are used on almost every variety of grinder.

Fig. 397 illustrates our Daisy Grinder Plate. The little white marks represent fine cross teeth that nearly fill the corrugations and force the grain over the bridge of one corrugation into another, and keep doing so until it reaches the outside and is thrown off.

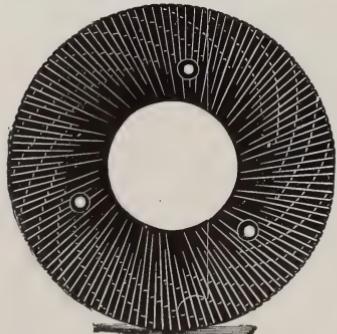


Fig. 397

Code

7 in. concave reversible plates for Daisy Grinder, \$1.50 per pair. (Belie)

8 in. concave reversible plates for Daisy Grinder, \$1.75 per pair. (Belief)

10 in. concave reversible plates for Daisy Grinder, \$2.00 per pair. (Bell)

12 in. concave reversible plates for Daisy Grinder, \$2.50 per pair. (Bellow)

We supply grinder plates for the Toronto, the Rapid Easy, the Joliette, the Brandon Grinders.

The Baby Grinder

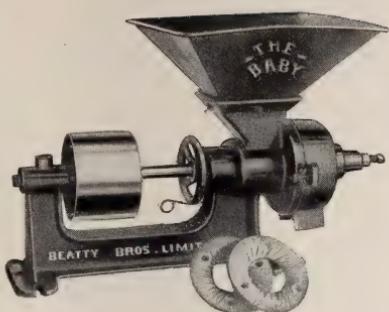


Fig. 481.—Baby Grinder.

List, \$15.00. Code, (Agio).

Weight, 82 lbs.

An extra set of Grinding plates is sent with each Baby Grinder.

We guarantee it to do good work, and to be a perfectly efficient and serviceable machine.

By actual test we have found that it will grind 25 per cent. faster than any other machine with the same size plates. It is the lightest grain grinder on the market, and yet is perfectly rigid. There is no unnecessary wear on the machine from rattle or vibration.

The Shaft is exceptionally large for a small grinder, being 15/16 inch in diameter. It is made of the best cold rolled steel, and runs in babbited bearings.

The Plates are 5 $\frac{3}{4}$ inches in diameter, and are so made that the corrugations get smaller towards the edge, thus insuring that the maximum efficiency of the grinding plates will be applied the grain.

No bagger is required on the Baby. The bags can be placed right at the spout underneath the plates. The plates can be easily adjusted for fine or coarse grain, by means of the small wheel on the shaft just below the hopper.

The Drive Pulley is 6 inches in diameter—exactly the same as on the largest grinders—and has a 4 $\frac{1}{2}$ inch face. In this way, just as much power can be put into the Baby with an engine of given horsepower, as into the larger machines.

The Baby should run from 1,800 to 2,000 revolutions per minute.

In Fig. 482 we illustrate the Baby Grinder fitted with a fly-wheel. This adds great momentum to the shaft, saves power, and enables the grinder to run more smoothly.

The Baby Grinder is a well built, carefully designed machine, made for hard work, and is very nicely finished. Its sales are advancing by leaps and bounds, and no dealer should be without at least one of these machines in stock.

No up-to-date farmer denies the advantage of ground feed as compared with feed unground. It is now a generally accepted fact that ground feed will go 15 per cent. further than whole grain.

Figs. 481 and 482, we illustrate the Baby Grinder. This grinder was placed on the market in response to the great demand all through the country, for a small, simply-constructed, portable machine, reasonable in price, and suited to the requirements of the farmer who does not intend to keep a large amount of stock.

As a seller the Baby Grinder has had extraordinary success. Once the great advantages of ground feed were made clear, farmers became big buyers of Grain Grinders. The Baby appeals to any farmer who does not feel inclined to incur the expense of buying the more expensive Cyclone or Daisy Grinder.

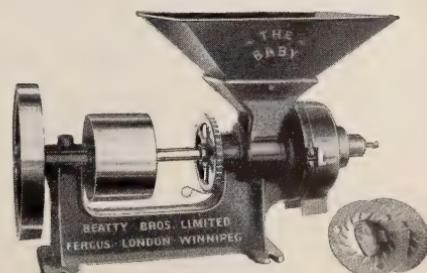


Fig. 482.—Baby Grinder with fly-wheel.

List, \$17.50. Code, (Agree).

Weight,

Plates for Baby Grinder per pair, 80c.
Code, (Bench).

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